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REPUBLIC OF CHILE

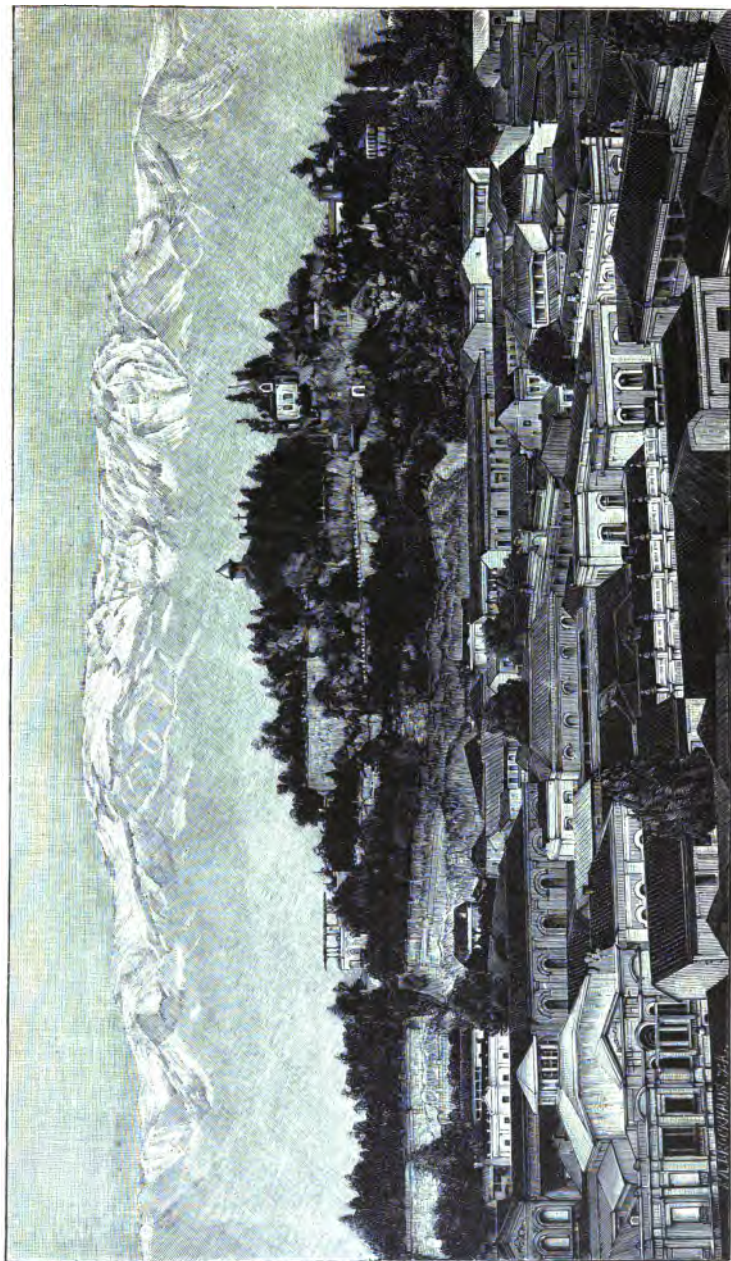
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THE REPUBLIC OF CHILE.



THE HILL OF SANTA LUCIA IN SANTIAGO WITH THE ANDES IN THE BACKGROUND.

A SHORT DESCRIPTION
OF THE
REPUBLIC OF CHILE.



According to official data.

With a map and 37 illustrations.

LEIPZIG:
F. A. BROCKHAUS.

—
1901.

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PIER IN VALPARAISO.

FIRST CHAPTER.

SITUATION. — BOUNDARIES. — DIVISIONS. — POPULATION.

SITUATION. — The Republic of Chile is situated on the west coast of South America and stretches from the Rio Sama (about 18° southern lat.) to the island of Pedro Ramirez (about 56° southern lat.) south of Cape Horn, the southern-most point of South America.

This long stretch of coast-land differs as much as 180 miles in breadth and is 2520 miles long. On the West it is bounded by the Pacific Ocean and is the coast furnished with numerous harbours.

By reason of its shape Chile is very accessible, the numerous natural treasures and products being easily transported to the coast and thus put on the markets of the world.

CHILE.

The Government too can, if necessary, send troops under the protection of its men-of-war to any part of the country.

BOUNDARIES.—Chile is bounded on the North by Peru and on the East by Bolivia and Argentina. Since the Pacific War the provinces of Tacna and Arica in the North are occupied by Chile in accordance with a treaty formed with Peru.

From about the 24° to the 41° southern lat. the boundary in the direction of Argentina is formed by the main chain of the Andes, which at the same time forms the watershed between the Pacific and the Atlantic.

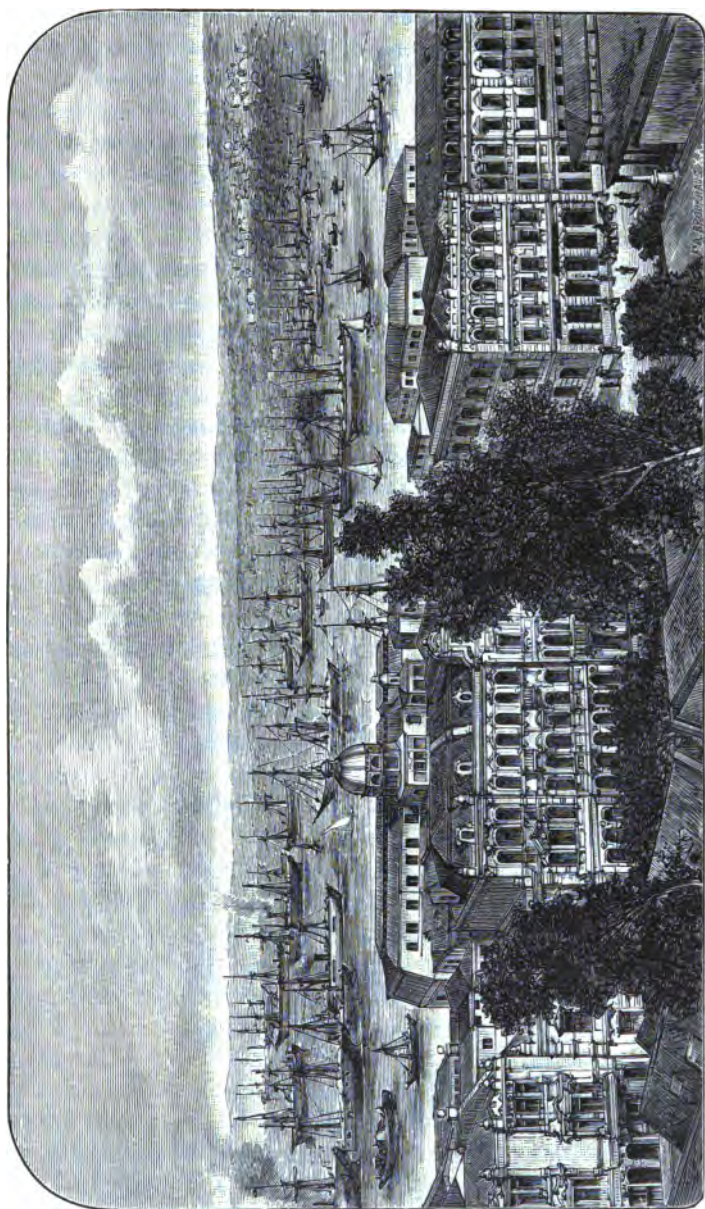
From the 41° to the 52° , where the Andes are rather irregular in shape and split up into several chains, the boundary is not yet fixed; it will however be soon defined through the arbitration of His Majesty the King of England, the boundary question at issue between Chile and Argentina being thus finally arranged in an amicable manner.

DIVISIONS.—Looked at from the agricultural and economical aspect as well as from the point of view of the distribution of its natural products Chile may be divided into three great zones.

The northern zone stretches about as far as the 30° and shows for the most part the characteristics of a desert. It is in this thinly populated zone that is to be found the largest amount of the mineral treasures of the country.

An European savant, who explored these neighbourhoods on behalf of the Chilean Government, compared them to a huge chemical laboratory, because they are stocked with almost every kind of ore. They contain immeasurable quantities of saltpetre and borax and also numerous silver- and copper mines, especially the latter.

The central zone, about as far as the 38° , reaching up to the boundaries of the province of Valdivia, is the best cultivated and watered. In many parts it resembles a large, beautiful garden and is crossed by numerous railways and roads and is on the whole fairly thickly populated.



BAY OF VALPARAISO.

This is the agricultural zone, and in it thrive wine, olives and corn to a splendid degree, the climate being considered one of the most agreeable in the world.

The southern zone is mainly remarkable for its woods. There is in some places good coal, and in some of the rivers gold dust has been found, but the chief riches of this still sparsely populated zone are the woods and the products of the sea. Cattle raising however is developing, and the industries, pursued for the most part by German colonists are increasing to such an extent and their products are so good that they are very highly valued not only in South America but also in Europe, as for instance the leather manufactured in Valdivia.

The Republic is divided into one territory and 23 provinces, the names and sizes of which are shown in the following table. At the head of each province is an intendant. The provinces are divided into departments which are ruled by governors. The intendants and governor are appointed by the President of the Republic.

Name	Size
Territory of Magallanes	195 000 sq. kilometre
Province of Chiloé	10 348 „
„ „ Llanquihue	20 260 „
„ „ Valdivia	21 536 „
„ „ Cautin	8 100 „
„ „ Malleco	7 400 „
„ „ Bio-Bio	10 769 „
„ „ Arauco	11 000 „
„ „ Concepcion	9 155 „
„ „ Ñuble	9 210 „
„ „ Maule	7 591 „
„ „ Linares	9 036 „
„ „ Talca	9 527 „
„ „ Curicó	7 545 „
„ „ Colchagua	9 829 „
„ „ O'Higgins	6 317 „
„ „ Santiago	13 527 „
„ „ Valparaiso	4 297 „
„ „ Aconcagua	16 126 „

	Name	Size
Province of	Coquimbo	33 339 sq. kilometres
„	„ Atacama	73 500 „
„	„ Antofagasta	187 000 „
„	„ Tarapacá	50 000 „
„	„ Tacna	22 500 „
		752 912 sq. kilometres

POPULATION.—Owing to the difficulty of holding a census in so large a land the number of inhabitants is not yet accurately known; it can however be estimated at 3,500,000 souls. In the middle of the 19th century Chile had a population of at least 1½ millions.

The largest towns in the country are the capital of the Republic, Santiago, with 320,000 inhabitants and Valparaiso, the chief harbour in Chile, with 150,000 inhabitants.

Chile has an area of 752,912 square kilometres, and in this enormous stretch of land there are only 3½ millions inhabitants. We would here point out that Belgium has an area of 29 456 square kilometres and a population of 6,670,000; France has 38,518,000 inhabitants in an area of 536,408 square kilometres, and Great Britain according to the last authorized census of 1899 a population of 40,559,000 in an area of 314,339 square kilometres. When one thinks that the German Empire with its 540,000 square kilometres has to-day a population of 54 millions inhabitants, and not too thickly crowded together either, Chile with its splendid climate and fruitful soil is even in its central portion still very sparsely populated. Twenty millions people more can certainly still find a livelihood on the mainland and on the large islands in the southern district by means of agriculture, cattle-breeding, industry and by a better exploitation of the mines and forests.

According to the latest statistics issued in 1895 there are living in Chile 6241 Englishmen, 7049 Germans, 1490 Austrians and Hungarians, 8296 Spaniards, 7809 Frenchmen, 7587 Italians and 1570 Swiss (almost all live in the new colony of Araucania), so that according to these statistics

there are altogether 42,105 Europeans. The actual numbers however are much higher, especially as regards the Germans. There are 29,687 souls from the other Republics of America; amongst these Peru heads the list with 13,695, the Argentines come next with 7531 and the inhabitants of Bolivia come third with 6654. In these statistical data the province of Tacna is not included.

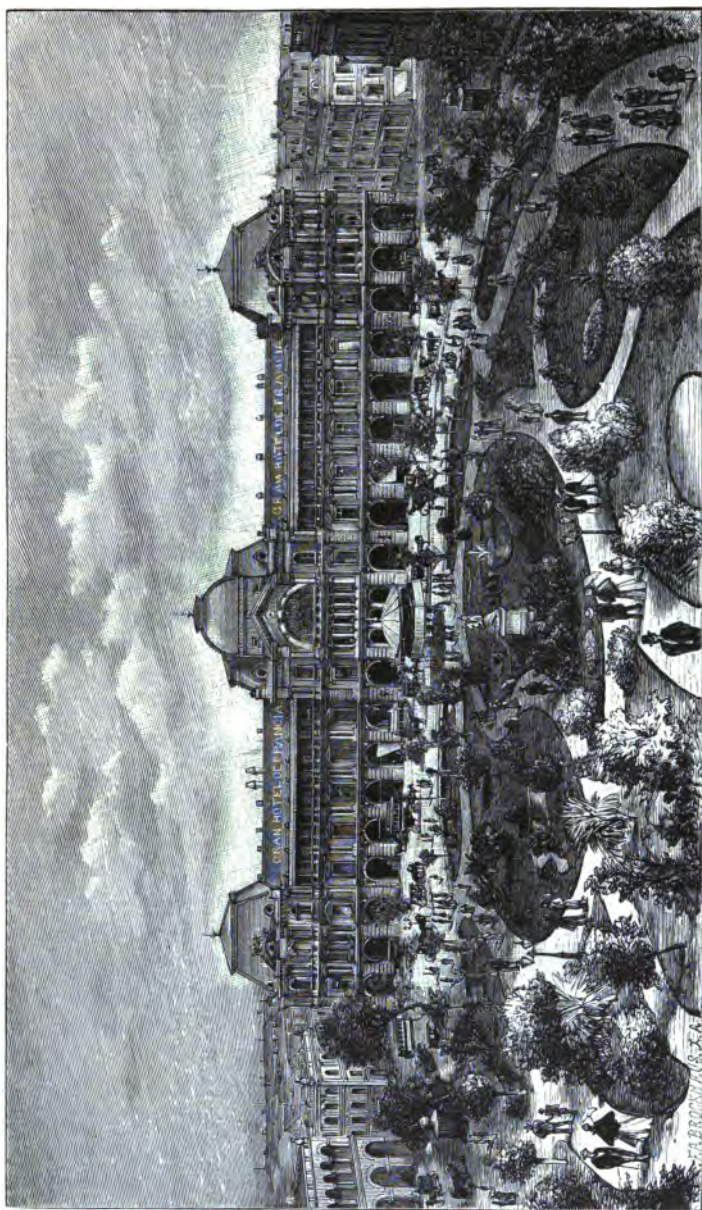
There are no negroes in Chile. Thus is explained the uniformity of the race, which for the most part belongs to the pure white, North Spanish race. Amongst the rest are about 50,000 representatives of the pure American race.

The Indians are called Araucanians; they are no longer independent wild clans, but work on the farms of the inhabitants of Chile and the foreigners neighbouring the old Araucanian territory. Their children are nearly all baptised and attend the public schools and those of the Franciscans who are actively engaged in that district, with good results.

The Chilean Mestizo, the result of the mixture of Spaniards with Araucanians, is noticeable for his strength and valour and makes a brave soldier and excellent workman; he is much prized in the mines and other enterprises of Chile and other countries in America, where there is a demand for strength and lasting power.

As we have already stated, the largest towns in the country are the capital of the Republic, Santiago, and Valparaíso, the chief harbour. Both are well provided with public buildings, palaces belonging to the first families of the land, beautiful churches, theatres, monuments, hospitals and schools. The tramways in Santiago and Valparaíso are now driven by electricity and the streets and many of the buildings lighted with electricity. The Alameda in Santiago, a lovely promenade, divides the capital into two halves; it is 4 kilometres long and 80 metres broad. It is planted with trees, is ornamented with numerous monuments and from it a lovely view is to be had of the eternally snow-covered Andes, which appear to be in the immediate neighbourhood.

Almost in the centre of the town rises the hill of Santa Lucia with its beautiful gardens. Elisée Reclus says in his



PLACE OF ARMS AT SANTIAGO.

geography that the most wonderful views are to be enjoyed from this hill. Santiago is 560 metres above the sea level.

Both towns contain a considerable number of Englishmen, Germans, French, Italians and Spaniards, all of whom have their respective clubs, hospitals, schools, fire-brigades and similar institutions.

Valparaiso's trade extends as far as Mexico and California and constant communication is kept up through the strait of Magellan with Europe and New York. The harbour of Valparaiso is very fine and spacious and offers a continually changing picture of steamers and sailing vessels, from which fly nearly all the flags in the world.

A quarter of an hour's distance from Valparaiso lies the little town of Viña del Mar with its 15 000 inhabitants. It is known for its splendid climate, which is so mild that the gardens, which surround the houses and hotels, produce the most beautiful flowers the whole year through.

Important by reason of their industry, agriculture and mines are too the towns of Concepcion, Iquique, Valdivia, Chillan, Serena and Talca.

SECOND CHAPTER.

HISTORICAL SURVEY. — UNDER SPANISH RULE. — THE
REVOLUTION. — INDEPENDANCE. — THE REPUBLIC.

UNDER SPANISH RULE.—The American continent, to which Chile belongs, was discovered towards the end of the fifteenth century by the Italian seaman Christopher Columbus.

Columbus' successors soon penetrated as far as Peru and found amongst the inhabitants a comparatively far advanced civilisation. The terror of subjugation, however, and the greed of the Spanish leaders had a most deleterious effect upon the tribes settled in that neighbourhood, and finally to prevent quarreling amongst the leaders the country was divided amongst these latter.

Diego de Almagro received the portion situated south of Peru called Chile. He was however unable to take possession of this territory, for he had to do with a stubborn, warlike people, who refused to budge before the better arms and the courageous attitude of the Spanish soldiers. Despite the greatest exertions Almagro was forced to retreat to Peru. Then Pedro de Valdivia, a courageous leader, undertook to prepare a fresh expedition into Chile; he thought that with a better equipped army of considerable magnitude he would be able to conquer the country situated south of Peru. He succeeded too, but not without difficulty, in reaching the centre of Chile as far as the bank of the river Mapocho, where on the 12th February 1541 he founded upon the hill of Santa Lucia the town of Santiago, which later on became the capital town of the new country.

The horrible acts of cruelty perpetrated by the Spaniards on the inhabitants naturally resulted in countless hordes of the people rising up throughout the whole country to fight for their liberty. The Araucanian chiefs Lantaro and Caupolican attacked Pedro de Valdivia when he had left Santiago to exterminate his stubborn opponents in the South. Pedro de Valdivia was helpless against the new tactics displayed by the Araucanians, which consisted in dividing up into many bands and attacking the Spaniards consecutively so as to tire them out and annihilate them: in the end he was beaten by them.

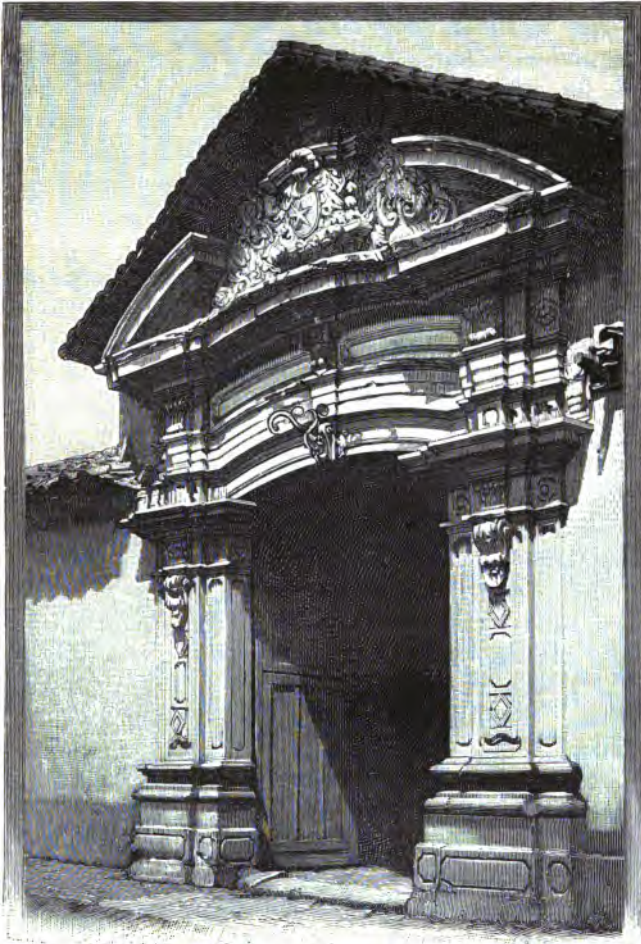
The Araucanians took advantage of this opportunity to avenge all the acts of cruelty sustained; the Spanish leader together with his soldiers were killed in battle after offering valiant resistance.

The jubilation, though, of the native Indians was not of long duration; the Spaniards who had remained behind in Santiago continued the struggle and completely annihilated the enemy. During these battles fell too the leaders Caupolican and Lantaro.

Towards the middle of the sixteenth century the Spaniards had extended their sway over the whole country. Until the end of the eighteenth century the history of Chile has nothing particular worth recording; all progress was shackled by the poverty of the new colony and the want of interest displayed by the Governors.

This sad state of things was at last altered by the appointment of Don Ambrosio O'Higgins as administrator of the new country which then began to make speedy progress. O'Higgins was an Irish-man, and came as a trader to Peru: he was sent hence to Chile as the King's official. To his indefatigable activity is due the erection of a large number of public buildings; he built amongst others the Cathedral and the Mint and erected in Santiago dams as a protection against the continual overflowing of the Mapocho. In the course of his honourable and arduous administration he also founded numerous towns and facilitated the traffic by laying many country roads which were in every way a blessing to the poverty-stricken land.

During those times of Spanish dominion poverty and ignorance were astonishingly prevalent among the inhabitants of Chile. All import of books and literature into



SPANISH HOUSE FROM THE OLD COLONIAL PERIOD.

the American colonies had been forbidden by Royal command, in order to prevent the engendering of all thoughts of freedom. All material advance was moreover quite out

of the question because all trade and commerce was monopolised by the King. Direct import of European wares was absolutely forbidden, and in the same way no colonial products were allowed to be exported to Europe. In consequence of these conditions dreadful distress prevailed among the population, who had to pay immoderately high prices for the necessaries of life. And so the Spanish state funds increased more and more, while the colonies in their distress suffered the pangs of starvation. At that time Chile was so poor that the Peruvian treasury had to lend help towards the payment of the cost of administration.

In spite of the great distress and the complete subjugation of the inhabitants of Chile, who believed that blind obedience to the King was a commandment of God, ideas about freedom began to crop up, these being very widely spread at that time and traceable to the struggles for liberty in the English colonies in North America towards the end of the eighteenth century.

The declaration of independance on the part of the United States served as an instructive example to the South American colonies, and very soon the results thereof were to be noticed in the Spanish colonies.

THE REVOLUTION.—At the beginning of the nineteenth century Napoleon Bonaparte penetrated Spain, dethroned the Ruler there and proclaimed his brother Joseph King. This event furthered the revolutionary ideas, which were spreading in the Spanish possessions in America, despite the forcible measures, taken by the King's representatives, to stifle ideas which they considered contrary to the unconditional subservience to which the colonies were pledged.

The colonies refused to recognise the overrule of the new King Joseph Bonaparte and determined to organise an administration of their own and to institute governments of their own, until the usurped throne should be again possessed by the lawful ruler.

The latter scheme however was but a pretext hiding the actual aim of the movement that followed upon the complete independance of the colonies.

The representatives of the legitimate King realised the new situation to its full extent and powerfully opposed the execution of the alleged plans, which would necessarily bring in its train the renunciation of the Spanish supre-



MONUMENT OF SAN MARTIN.

macy. But it was too late; the revolutionary spirit had taken possession of the whole people, and from henceforth freedom and independance formed the ideal to be sought for and if necessary, fought for. One could only hope that

success would accompany such a noble and bold enterprise as that of rendering independent the capital town.

The first independent government of Chile was instituted on the 18th September 1810, which day has ever since been celebrated as the anniversary of the national independence. One of the first measures introduced by the first Chilean congress was the non-importation of slaves into Chile; the congress determined moreover that the children born of slave parents and living in Chile should be free.

In order to restore the absolute supremacy of the King, the Spanish government in Peru collected the necessary troops to attack the Chilean patriots and in the end of 1812 sent a strong army south.

After many battles between Spaniards and patriots, in which the latter almost always remained victorious, a decisive engagement took place at Rancagua not far from Santiago which ended in the annihilation of the troops of the revolutionary party. The leader of the patriots on this so baneful, but still so glorious, day was the brave General O'Higgins, a son of the former governor Ambrosio O'Higgins.

After this heavy defeat the patriots realised that the aim they had in view must be abandoned for the present, and in order to escape the revengeful measures of the Spanish despotic rule they fled from Santiago to Mendoza across the Andes. Countless acts of tyranny were enacted during the reconquest by the Spaniards. The most prominent inhabitants were banished to the desert islands of Juan Fernandez and secret executions took place in the prisons. Captain San Bruno, whose name has been handed down in Chile to the present day as a prototype of a brutal, bloodthirsty creature, was guilty of the most unheard-of deeds of barbarity. The inhabitants were robbed of their possessions, and excessive taxation was reintroduced.

These circumstances only served more and more to strengthen in the minds of the victims the wish for a free country at any price.

INDEPENDANCE.—The Chilean General, O'Higgins, who after the defeat at Rancagua had fled with the remains of

his troops to Mendoza in Argentina, here met the Argentine General, Don Jose de San Martin, with whom he was on the terms of most intimate friendship.



GENERAL BERNARDO O'HIGGINS.
(Reproduction from an old portrait.)

San Martin, a strong and honourable officer, had formerly taken part in numerous battles against Napoleon's army and was Governor of Mendoza at the time of O'Higgins's arrival at that town. Both generals decided to equip a

strong expedition to liberate Chile. They spent two years preparing for it, and at the end had brought together an army of 5200 men, 1600 horses and a large number of mules. Despite the watchfulness of the Spaniards they crossed the Andes at the Uspallata Pass, which is 4000 metres high and always covered with snow.

General San Martin put himself at the head of the expedition and on the 1st February 1817 surprised the Spanish troops near Santiago on the Chacabuco Hill.

In this battle and in that succeeding it at Maipo, the greatest in the war of independence, the Spaniards were completely beaten. These splendid successes on the part of the patriots brought the Spanish supremacy to an end and assured the independence of the country.

After Chile had freed itself from the Spanish yoke, San Martin and O'Higgins determined to send an expedition to Peru, to drive out the Spaniards from this country too. For this it was necessary to organise a fleet, to protect the land-army. In spite of Chile's great poverty the two plucky generals succeeded in equipping a small fleet of men-of war which soon was strengthened by vessels taken from the enemy. This fleet left the harbour of Valparaiso under the leadership of Admiral Lord Cochrane, one of the most brilliant of the officers of the English navy, who had come entirely on his own account from Europe to enter Chilian service. On the 5th November Lord Cochrane by means of a daring coup-de-main took possession of the Spanish ships lying in the Callao harbour under the protection of the harbour guns, and thus cleared the way for the army which was pressing forward under General San Martin.

In June 1821 the army entered Lima.

During these events O'Higgins had remained in Chile at the head of the government and acted as administrator for six years till January 1823.

On perceiving that public opinion was no longer satisfied with his administration he preferred to retire from the government so as to save his fatherland from the terrors of a civil war. In thus acting he gave his fellow

citizens an example of the most noble unselfishness and retired into private life in Peru. He died there in the midst of his agricultural work at the beginning of 1842.



MINISTER DIEGO PORTALES.
(Reproduction from an old portrait.)

THE REPUBLIC.—After General O'Higgins' retirement there followed some years of anarchy, until General Joaquin Prieto, who was busy in Araucania subjugating the hostile Indian tribes there, marched to Santiago, beat the govern-

CHILE.

mental troops and with the cooperation of Diego Portales created a strong central government.

Portales, a merchant from Valparaiso, who had already as a young man given proof of an energetic character and indefatigable industry, received from President Prieto the command to undertake the ministry of the interior.

He showed great perspicacity in his new position and also a great capacity for his office, so that he succeeded in raising the administration of Chile very greatly. Through his energy anarchy disappeared from the Republic and gave way to the development of public institutions, which are now the object of Chile's just pride. In 1833 Chile received the political constitution, which with the exception of unimportant changes that have quietly and gradually come about, has remained unaltered up to the present day.

The organisation of the Republic was finally concluded under the presidency of General Prieto and the administration of the finances satisfactorily arranged.

Under his rule Valparaiso developed into an important trade emporium on the coast of the Pacific Ocean. —

It was under his presidency too, that the Bolivian general, Santa Cruz, intended to form a Peruvian-Bolivian confederation or rather in reality to gain possession of the sister Republic of Peru, in order to gain the ascendancy on the west coast of South America. In this plan Chile perceived a threat to her own existence, and President Prieto sent an army under General Manuel Bulnes to frustrate General Santa Cruz' plans. The latter's army was completely beaten by the Chilean troops under General Manuel Bulnes in the big battle at Yungay near Lima.

On his return to Chile General Bulnes was elected President of the Republic; this high office he filled from the 18th September 1841 till the 18th September 1851.

During these ten years peace was disturbed neither at home nor abroad. Numerous educational institutions were founded; amongst them being the University, the Teachers' Seminary, the Art- and Industrial-School and the Naval-School at Valparaiso. During the same period too was

founded the town of Punta Arenas in the Strait of Magellan, and then was instituted the first steamship traffic on the coast of the Pacific.

President Bulnes was succeeded on the 18th September 1851 by Manuel Montt, one of his best ministers.

President Montt was obliged to suppress two insurrectionary movements which broke out one at the beginning, the other at the end of his rule. To his honour it must be recognised that he effected many great works, amongst which are the railway from Santiago to Valparaiso and the beginning of the building of a railway from Santiago to the South; also the artillery barracks and the congress palace in Santiago, which were likewise begun at that time.

President Montt paid especial attention to the development of public instruction and the advance of trade and national industry. For the furtherance of the latter he founded the colonies of Valdivia and Llanquihue. He had persuaded numerous German families to come there, and they worked these regions for half a century to the great advantage of themselves and of the country. The foundation of the first banks in Chile took place also at that time; the object of the latter was to take money into their keeping and by means of loans support landowners, mine owners and manufacturers who were in need of capital in their undertakings.

On the 18th September 1861 President Perez succeeded Montt at the head of the government. By his moderate and conciliatory policy he assured internal peace to Chile. Unfortunately he did not succeed in maintaining peace with foreign countries also.

It was impossible for him to avoid war with Spain. This war originated with Spain's attack upon Peru, from which it wanted to take the Chincha Islands. Inspired with the feelings of brotherly affinity Chile allied itself with Peru, Bolivia and Ecuador to cooperate in waging war. During the war the Chilian corvette Esmeralda under the command of Captain Williams Rebolledo took possession of the Spanish gunboat Covadonga, whereupon the harbour town of Valparaiso was bombarded by the combined

Spanish fleet. Valparaiso was an absolutely unfortified commercial town, without guns and without any means of warding off an attack. After the completion of this work of destruction the Spanish fleet left the Chilian coast, and with this the war practically came to an end. In 1867 a truce was agreed upon, and twelve years later peace was definitely concluded.

After these events the fortification of the harbour of Valparaiso was commenced so as to avoid any repetition of such occurrences. At that time the railways begun during Montt's rule were finished; the southern line was continued as far as Curicó and the lines from Chillan to Talcahuano and from Llaillai to Los Andes were begun. Finally new telegraph systems were laid so as to connect the whole central territory of the Republic.

President Perez' successor was Federico Errázuriz. He reigned only five years, in accordance with a law which he himself laid before the congress and by which the reelection of the President was not permitted.

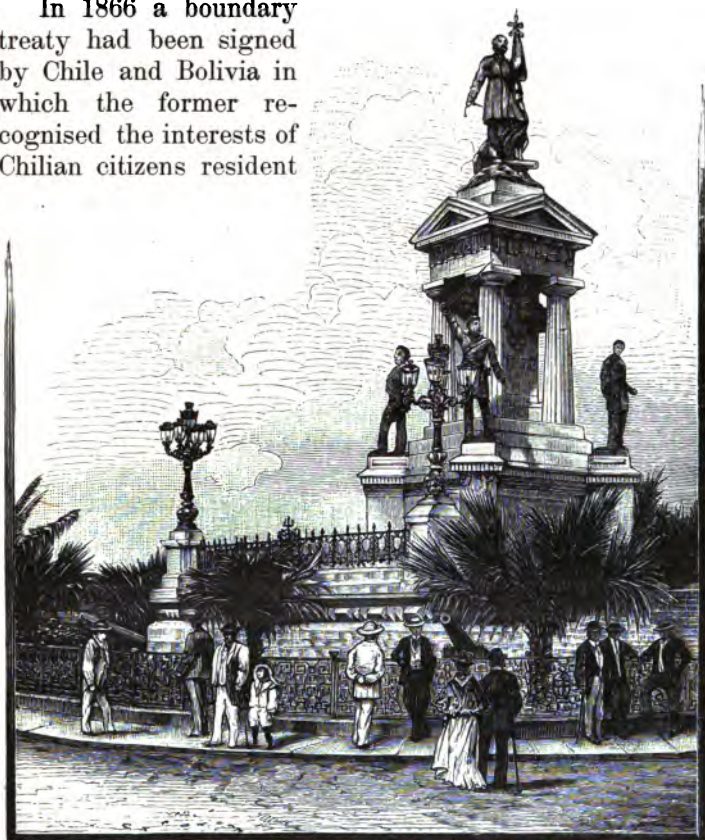
Like President Bulnes, Errázuriz had the good fortune not to be disturbed during his term of office by either revolutions or foreign warfare; thanks to this circumstance he was able to complete many tasks of the greatest importance to the Republic. The railways that had been begun were completed, the southern line to Chillan lengthened, and a new railway from San Rosendo to Angol laid down.

He completed the building of the state stores at Valparaiso as well as the congress- and exhibition buildings at Santiago. To him is due the fact that the Chilian fleet, which was only in its infancy, was increased by the purchase completed in 1873 of two new iron-clads, the *Almirante Blanco* and the *Almirante Cochrane*, and the gunboat *Magallanes*. Six years later Chile owed her victory in the war against Peru and Bolivia to these ships.

The next President, Don Anibal Pinto, took over office on the 18th September 1876, and reigned till the 18th September 1881. During his administration the country was afflicted by great economical distress, caused by the failure

of the silver- and copper mines, the products of which formed the main portion of the annual exports. Besides this there arose serious foreign complications which led at the beginning of 1879 to a war with Peru and Bolivia.

In 1866 a boundary treaty had been signed by Chile and Bolivia in which the former recognised the interests of Chilian citizens resident



MONUMENT OF ARTURO PRAT AT VALPARAISO.

on the Bolivian coast. As Bolivia did not act up to several articles of this treaty, Chile in 1879 declared the treaty null and void and had the harbour of Antofagasta occupied with soldiers. The Peruvian government, emphasising their friendship towards Chile and Bolivia, offered their services as mediators in order to avoid war, and with this object

in view sent a plenipotentiary on a special mission to Santiago. Soon however it was discovered that there had existed since 1873 a secret alliance between Peru and Bolivia. The Chilian government therefore considered the allied parties as enemies and declared war upon them on the 5th April 1879. The chief event during this war is the naval battle off Iquique, in which the old wooden ships *Esmeralda* and *Covadonga* were used by Chile against the Peruvian iron-clads *Huascar* and *Independencia*.

When Captain Arturo Prat, in command of the *Esmeralda*, noticed that his ship, which was being pressed by the *Huascar*, was beginning to sink, he leapt on board the enemy's iron-clad together with some of his men in order to seize it. His daring act, though, was not crowned with success, and he and his brave followers met with an heroic death on board the *Huascar*. Soon after this the *Esmeralda* sank with her flag still hoisted. This heroic deed of the captain had a most inspiring effect upon the Chilian army, which under the command of General Baquedano fought numerous battles with the allied inimical troops, and always with a victorious issue, as for instance at Tacna, Chorrillos and Miraflores, the biggest in South America, and in January 1881 entered Lima.

On the 18th September of the same year Domingo Santa Maria, who had been minister under Perez and Pinto, followed as President of the Republic.

To his lot fell the difficult task of concluding peace with Peru. The treaty was signed in April 1884. In it Peru surrendered unconditionally the province of Tarapacá to Chile, whilst the territories of Tacna and Arica were to remain under Chilian rule for a period of ten years, after which time the inhabitants of the territories in question on certain conditions were to determine by general vote with which of the two states they desired to be definitely incorporated. President Santa Maria also proclaimed a truce with Bolivia; according to the terms of which Chile was to maintain possession of the Bolivian coast until a treaty of peace should be arranged.



INTERIOR OF A CHURCH IN SANTIAGO.

At the commencement of this period a boundary treaty between Chile and Argentina also was concluded which determined the mountain range of the Andes as the boundary line between the two republics, the Strait of Magellan as a portion of Chile, the eastern portion of Patagonia as a part of Argentina, whilst the Terra del Fuego was divided between the two states in accordance with a border line mutually agreed upon. There still remained, though, some important points unsettled. There were, moreover, a number of important laws passed, amongst others those on civil marriage and public churchyards.

On the 18th September 1886 José Manuel Balmaceda, one of Santa Maria's ministers, was elected president.

He reigned till the 28th August 1891, without completing his term of office, which according to the constitution lasted till the 18th September of the same year.

Owing to a difference of opinion about the constitution a conflict arose between the congress and the President of the Republic, and this ended in a long civil war which cost the country dearly in precious lives and money. The revolution ended by the overthrow of the central government. Under Balmaceda's reign large public works were completed; orders were given in Europe for new warships, and the land army was provided with new arms.

After Balmaceda's death there stood at the head of the Government a committee elected by the national congress, which arranged general elections for the filling of the presidency, the new formation of the senate, the chamber of deputies and the town boards.

As President of the Republic was elected Jorje Montt, one of the most eminent heads of the navy and member of the government committee. Montt was faced with the difficult task of rendering secure the new government and lessening the hardships of a long and bloody war. Conspicuous among the acts of his reign was the zealous care bestowed on the further development of the army and navy.

President Montt's successor was Federico Errázuriz, a son of the former President of the same name. The

country continued under his administration to develop favourably and he it was who terminated the old boundary question with Argentina, by having the matter settled by a court of arbitration.

The President Errázuriz died on the 12th July 1901. During his illness the minister of the interior Anibal Zañartu in his quality of Vice-President of the Republic was entrusted with the executive power till the 18th September 1901, on which date the President German Riesco, elected on the 25th July, entered on his functions.



PALACE OF GOVERNMENT. SANTIAGO.

THIRD CHAPTER.

GOVERNMENT.—POLITICAL LAWS.—PUBLIC EDUCATION.—
ARMY AND NAVY.

GOVERNMENT. — The government of Chile is that of the people and representative, the Republic being single and indivisible. It does not consist of Federal States, as is the case with some of the American republics.

There are none of those little feelings of jealousy which arise in the different provinces of the Republic ruled from one single point; and herein rests the main political and administrative strength of Chile.

There are three chief powers at work in the nation: executive, legislative, and judicative; this is in accordance with the constitution of 1833, and only very minor changes have been introduced since that date. The executive lies in the hands of a President and the Ministry, which consists of six members, appointed by the President. The latter is indirectly elected by the people, who elect three

electors for each deputy, and they represent the departments of each province.

The President is elected for 5 years and cannot be immediately reelected. The installation of the new President takes place on the 18th September, the anniversary of the independence of Chile. The President with the ministers governs with a State Council of 11 members, of whom 6 are elected by Congress and 5 by the President of the Republic.



PALACE OF CONGRESS. SANTIAGO.

The legislative power rests with the Congress, which consists of 2 Chambers, the Chamber of Senators and the Chamber of Deputies. Both are elected directly by the people. One deputy is elected for every 30,000 inhabitants and holds office for a period of 3 years. The senators are elected for 6 years, one to every three deputies, and half the senate is renewed every three years. There are 94 deputies and 32 senators. The voters must have completed their 21st year and be able to read and write. To be elected as a deputy the same age is required and to be a senator the candidate must be 36 years old. Deputies must have a private income of at least 500 pesos.

They receive no kind of remuneration for their activity, may fill no public office, and be bound by no manner of contract to Government, but they can always be reelected.

The judicatory power is absolutely and independently exercised by officials, who are appointed by the President of the Republic according to definite rules and cannot be removed from office except on the ground of a legal decision. The power in question consists of:

1. The supreme court of law, consisting of 7 members, who reside in Santiago and exercise jurisdiction over the whole of the Republic and possess corrective disciplinary and economical authority over all lawcourts of the nation.

2. Six courts of appeal, which have their centres in the capital town of the Republic and in the towns of Concepcion, Serena, Talca, and in Valparaiso. There is moreover a learned judge or special judge in the capital of each department. In the subdivisions of the department there are 858 subdelegate judges and 3068 district judges. The rights and interests of the government are represented before the courts by public prosecutors or solicitors to the treasury who exist in each department.

POLITICAL LAWS. — In Chile there are no privileged classes, and all are equal in the eyes of the law. There is only one jurisdiction, with the exception of the military one for purely military crimes. The freedom and safety of person and property are guaranteed. No one can be arrested without a warrant unless he be caught in flagranti.

There exists moreover absolute freedom to assemble in bodies and to form societies. As a matter of fact there are many scientific and political societies as well as unions of artisans, workmen and others. The inhabitants may hold large meetings without announcing these beforehand, but the participants may not carry arms with them. Press freedom also exists, not only on paper but also in reality, and this noble right has been often abused already. There are many newspapers and periodicals printed in Chile. The "Mercurio" of Valparaiso, founded in 1827, is the oldest paper in the whole of South America.

The catholic, apostolic, and Roman religion is protected and supported by the State, although there exists complete liberty of religion and in fact there are Protestant churches,



NEW BUILDING OF THE "MERCURIO", VALPARAISO.

schools and churchyards in different towns. There is an Archbishop, who resides in Santiago. This high office is at present held by Archbishop Don Mariano Casanova, installed on the 30th January 1887. The three bishops reside

in Concepcion, Serena, and Ancud, and two vicars in Antofagasta and Tarapacá.

The prisons now existing in the country number 87; amongst these are 15 cell prisons with 2180 cells and 7 reformatories for women. There are besides numerous country prisons and police dépôts.

Prisoners are taught reading, writing and various useful trades. For this purpose there are workshops in most of the prisons. About 1200 prisoners work in the different industries and for private enterprisers. By this the treasury gains about 20,000 pesos.

The organisation and rights of the municipal towns are regulated by the law of the 22nd December 1891, which created the autonomous municipal towns. All municipalities and the police are up to a certain point under the control of the Minister of the Interior.

The municipalities further and administer the progress and maintenance of their respective localities, the organisation and maintenance of the police in all towns, except capitals of departments, the health, cleanliness and adornment of the localities, elementary instruction, agriculture, industry, and trade. The budgets of expenses and accounts must be laid before the assembly of municipal electors for their sanction. The municipal towns are authorised to raise loans for the furtherance of public health, and cleanliness, for building of roads, purposes of education, etc.

The income accruing to the municipal towns with which they meet their legal dues, consists of: a personal duty of 1—3 pesos exclusively destined for the maintenance of the elementary schools; a duty on moveable and immoveable property, which however may not be higher than 3 per thousand; another duty affecting the places where tobacco and alcoholic drinks are sold; the contributions of the treasury, granted every year by congress, the amounts handed over by the owners of the municipality, the fines and various other sources of income, and finally the

patents or sums of money which have to be paid by industries and crafts.

Official statistics relating to the receipts and expenditure of all the municipal towns of the Republic are lacking, but we will here give the receipts of the municipality of Santiago, which amounted to 1,6 million pesos and in the same year of 1898 were used for the defrayal of the different expenses.

The police in the capitals of the department is directly under the control of the minister of the Interior, accord-



MUSEUM OF NATURAL HISTORY.

ing to the law of the 8th February 1896. Its organisation is managed by the President of the Republic, and its expenses paid from the means of the State.

In consequence of this law the safety of person and property has improved in the small towns and in the country. The other police not included in the above mentioned law is dependent on the Alkalds or mayors of the municipal towns and is paid by the communities in question.

The police in the whole Republic consists of 500 officers, 934 noncommissioned officers (gensdarmes of the first and

second class) and 5400 police soldiers or policemen. An arrangement special to Chile are the corporations or companies of firemen in nearly all towns.

These companies possess the best apparatus, buildings and dépôts. The members wear uniform, and only a few companies in small towns receive subvention from Government. As a rule the members of the companies bear all the costs and there are in the large towns also companies of foreigners of the most various nationalities.

The total number of these companies is 84.

PUBLIC EDUCATION.—In Chile there exists absolute freedom in educational matters and everyone can give and enjoy whatever lessons seem to him to be suitable, provided that such instruction does not militate against the good morals and safety of the State. But to obtain degrees or to visit the University, examinations have to be passed, which are held by official commission appointed by the chief board for public education.

This holds its sittings in Santiago and consists of 14 members; amongst them being the minister of education, the rector and the deans of the University, two members appointed by the University and three by the President of the Republic. The main duty of this board is to superintend the middle and higher or University education.

Education is gratis in all State institutions from the elementary school to the University, and poor scholars receive besides books and other educational materials gratis. In Santiago there is a State University with five faculties, namely: theology, law and political science, medicine and pharmacy, natural science and mathematics and philosophy. In the capital there is moreover a catholic University with faculties for law, natural science and mathematics. For the intermediate education there is the national institute in Santiago, which has a very large number of students, not only from Chile, but also all other countries of Spanish America. This institute was founded shortly after the declaration of independence of Chile. In all the

capitals of the provinces and in the capitals of the most important departments there are schools for boys and girls.

Special education is granted gratis by the State in: an agricultural institute and schools for agriculture and mining; a school for arts and crafts; a pedagogical institute destined for the training of teachers for the intermediate schools; seminaries for the training of teachers, male and

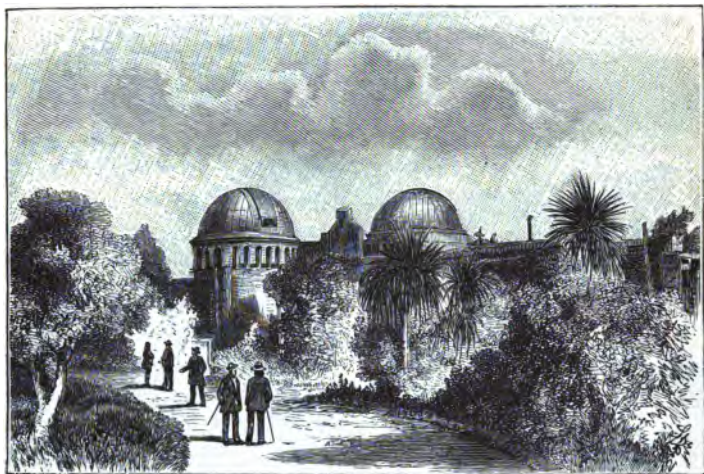


MEDICAL SCHOOL. SANTIAGO.

female, for the elementary schools; a deaf and dumb institute; an academy for painting and sculpture; a conservatory for music and declamation; a course for pharmacy, dentistry and midwifery.

The Government has also formed a commercial-technical institute, to further studies suited for this department. In 1898 there were 1368 schools for elementary education; of these 678 were attended by pupils of both sexes, while 87 were set apart for intermediate education.

The total number of children registered in all these schools amounted to 99,881 of whom 48,192 were boys and 51,689 were girls. Besides these schools maintained by the State there are numerous others kept by religious corporations and societies, where education is provided also gratis; and lastly many schools founded by private persons, where education is paid for. Some of these institutions are as good as the best in Europe.



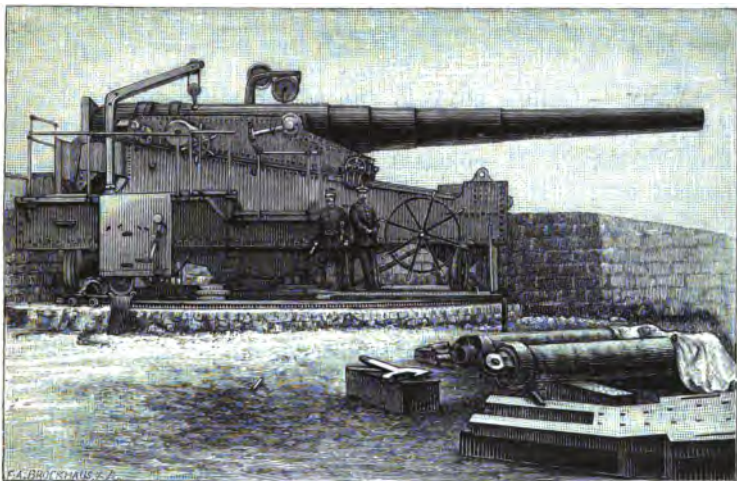
OBSERVATORY. SANTIAGO.

There are public libraries in the capital and in nearly all the chief towns in the provinces. The most important is the national library in Santiago, with over 100,000 bound volumes. There are besides these small libraries in the capital in various scientific institutes and a large library in the national institute containing more than 40,000 volumes. In each school and in each seminary in the provinces there is also a small library.

ARMY.—The Government has for years been working at very great expense to provide the army with the best weapons and with trained officers. For the latter end a

fairly large number of european officers were obtained who have served as instructors to the troops or as teachers in the war academy and in the school for under-officers.

With regard to military matters the country is divided up as regards the distribution of its forces into five zones, the first of which comprises the north provinces, the second the central provinces including O'Higgins. The third zone stretches as far as and including the province of



FORT VERGARA. VALPARAISO.

Concepcion; the fourth and fifth comprise the large southern remainder of the country. The management and command of the army is under a general staff divided into 6 departments with different spheres of work. At the head of this general staff is a German officer, General Koerner. The officers' corps in the standing army consisted at the end of 1898 of: 4 generals of division, 6 brigadier generals, 18 colonels, 84 lieutenant-colonels, 91 majors, 222 captains, 266 lieutenants, and 223 sublieutenants or ensigns. In addition to these come about 7000 non-commissioned officers and common soldiers. This army consists of 10 regiments of infantry, 8 regiments of cavalry, 5 regiments of artillery,

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1 engineer corps and 2 regiments of fortress artillery for the coast defence. Last year in the month of September universal military duty was introduced on the lines of the German system. All young men capable of serving who have reached their 21st year, must serve in the active army during a period of 9 months. By this law the former national guard has been replaced.

The permanent army will in this manner count about 17,500 men, a number that can be increased in case of war to 150,000.

NAVY.—Chile's navy is one of the strongest in South America. Its organisation is identical with that of the English navy. It consists of 9 cruisers, of which the largest are: O'Higgins with 8500 tons; Captain Prat with 6966 tons; and the Esmeralda with 7030 tons. Besides these more or less strongly mailclad warships there are 3 torpedo cruisers, 4 torpedo catchers, 2 gunboats, 7 torpedo boats for the high seas and 7 ditto for the defence of the harbours. There are also several steam transport and one modern training ship. The majority of the vessels of the Chilian squadron have been built in the best English ship yards. At the end of 1899 the war fleet comprised the following: Vice Admiral and commander in chief of the Chilian armada (this post was held once by the former President Jorje Montt), 4 rear-admirals, 16 sea-captains, 20 frigate captains, 28 corvette captains, 10 lieutenants of the 1st class, 47 lieutenants 2nd class, 12 1st class mariners, 71 2nd class mariners, 19 1st class pilots, 15 2nd class pilots, 38 3rd class pilots, 2 1st class doctors, 4 2nd class doctors, 17 1st class surgeons, 5 2nd class surgeons, 3 chief paymasters 1st class etc. Besides these officers there are also crews of all kinds to the number of 4000 men. Under the admiralty is the naval school in Valparaiso, where the young naval officers are trained, and this school is attended by the sons of the best families. Its programme of study is based on that adopted by the English admiralty for His Britannic Majesty's naval

schools. The admiralty too directs the hydrographical office (Oficina Hidrográfica), which is mainly occupied with exploring the coast of Chile, has published numerous valuable maps and every year issues a yearbook, comprising an array of the most recent data important to seamen. Finally there should also be mentioned the fact that recruits, sailors, etc., who are unable on entering the army or navy to read and write, are taught in special military schools.

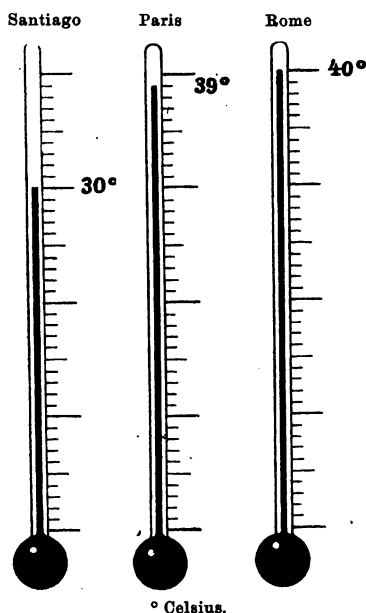
FOURTH CHAPTER.

CLIMATE. — COLONIES. — IMMIGRATION.

CLIMATE. — A wrong and very exaggerated impression exists on the whole, especially in Europe, regarding the temperature in Chile.

Owing to the topographical formation of the country the climate is very changeable. About from the 37th degree onwards it is very rainy. The sky is for most of the year clouded. The snow line lies as far as the 43rd degree 1400 metres high. Accurate meteorological observations are made here and especially at Ancud on the northern shore of the large island of Chiloé. The absolute extremes of temperature during one year in this part of the south were 20 degrees and 0 degrees C. The annual rainfall amounted to nearly 3,4 metres. Storms and hailstorms are frequent,

sometimes too rime formation is observed. Snow however falls even in the neighbourhood of the Straits of Magellar



COMPARISON OF THE HIGHEST TEMPERATURES.

rarely. The largest rainfall is from March to August, that is to say in the winter. The reader must too remember that we are in the southern hemisphere, where it is winter while in Europe it is summer, and that during the summer months there are winter months here.

The following are the mean temperatures in the southern-most town of Chile, Punta Arenas: in the summer 10,97 degrees, in autumn 7,03 degrees, in winter 2,77 degrees, and in spring 8,18 degrees centigrade.



PARK COUSIÑO AT LOTA.

The town of Punta Arenas with its invigorating climate is the southern-most town in the world. The climate of the central zone is on the whole as mild and pleasant as it is healthy. The mean temperature in the winter is never less than 5 degrees C, and although during some nights rime is found on the roofs and thin layers of ice at the edge of stagnant water, even tropical plants (Magnolia, Anona, Olives) are able in the open garden to stand the winter of central Chile. Rain falls during the winter almost only with the north and north-west winds. Storms

and heavy snow are rare, and snow never lies more than a few hours.

Fruit trees as a rule begin to flower as early as August, and although the rainfall in September is still considerable, the rise in temperature foretells the approach of spring. During the summer the day temperature vacillates between 14,8° and 26,6°; the air is uncommonly clear and dry, and even small rainfalls are rare.

The most frequent wind is a S. W. breeze, which brings pleasant cool breaths of air. The mean temperature in the summer in Valparaiso is 16,62°, in autumn 13,73°, in winter 11,41°, and in spring 13,09 degrees centigrade; in Santiago in summer 18,47°, in autumn 12,68°, in winter 7,39°, and in spring 13,06 degrees C. In Concepcion in summer 18,70°, in autumn 13,61°, in winter 9,24°, and in spring 14,31 degrees C. Fruit and corn ripen in this zone as early as December. The autumn is likewise very beautiful, only the air is less clear. In Santiago which lies very high, the thermometer falls down to minus 6 degrees in winter.

The climate of the whole of Northern Chile is noted for its small amount of rain. North of 27° rain and storm are almost unknown, and only heavy dew refreshes the earth. The mean temperatures of Copiapó, one of the most important towns in Northern Chile, are: in summer 22,69°, in autumn 17,18°, in winter 13,00°, and in spring 17,18° C. Even between 27° and 30° whole years often pass before rain falls, and in Northern Tarapacá the last heavy fall of rain was in the year of 1819.

In the hill district on the other hand, as in the middle zone especially from November to February that is to say in the height of summer, storms are very frequent. After Pissis the snow line lies under 38° at 2100 metres, under 36° at 2600, under 34° at 3400, under 32° at 4300, under 30° at 4900, under 28° southern latitude at 5500 metres.

The cold ocean stream coming from the south which runs near the coast, lessens the heat in summer in those neighbourhoods and renders the lack of rain more bearable.

Cloudbursts, storms and floods, which work great havoc amongst the crops, are almost unknown. The climate can well be maintained to be one of the best in the world and suits most of the inhabitants who immigrate from the most various parts of Europe most excellently. Marsh fever, called Terciana or Malaria, is unknown in Chile as is also the yellow fever.

COLONIES.—The first European attempts at colonisation were made between 1840 and 1850. At that time almost



MUNICIPAL THEATRE AT VALPARAISO.

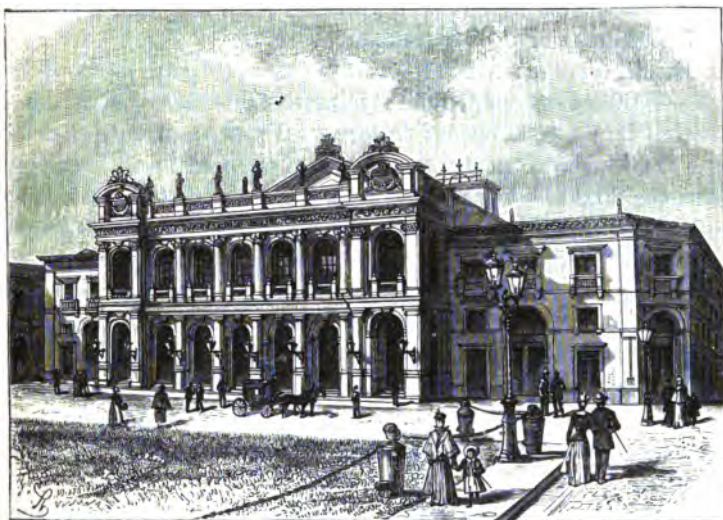
all the immigrants were Germans, and their attempt at colonisation, into the history of which we cannot here enter more minutely, proved absolutely successful. The Germans through their industry and energy made large districts arable after removing the woods which were for the most part very thick. Then places very soon grew into existence with numerous industries, especially beer breweries and tanneries, which at the present day belong almost exclusively to the descendants of those immigrants and now are worth millions of pesos. The centres now of this first German attempt at colonisation

are: Valdivia, Osorno and Puerto Montt. After the last revolution of the Araucanians had been put down at the end of 1882 with great energy and with armed force the government of the Republic determined to offer a large part of the fruitful country belonging to the old Araucanians to European colonists. At this second period of colonisation which lasted from 1883 to about 1890, the government offered very favourable conditions to the foreign colonists. They had a portion of their journey thither paid and were presented with parcels of land of from 50 to over 100 hectares, according to the number of persons of whom the colonist's family consisted. They received moreover a yoke of oxen, seeds and agricultural implements, materials wherewith to build a provisory house and too a sum of money to live on during the first year. The Government gave all these materials at cost price and this sum was, together with the year's pay received, considered as mortgage of the colonist's little property. The colonist had after three years to pay back this mortgage in annual contributions. Despite certain mistakes inseparable from a first experiment, the majority of those colonists who understood agriculture soon began to prosper, and where until 1882 only untamed savages wandered free, there are now towns, villages and enormous fields planted with wheat and other kinds of corn, and large gardens cultivated with every kind of vegetable and fruit tree in Europe.

IMMIGRATION.—In spite of these excellent climatic conditions and the guarantee offered by a land ruled by excellent legislation, only an insignificant number of immigrants have come there from Europe; the exact number of immigrants in half a century amounts to 40,500. And yet there is an extensive territory of 752,912 square kilometres, that is to say half again as much as Germany or France, at people's disposal. The country has a population of not yet 4,000,000 inhabitants, too small a number to exploit the riches of the country. Chile is above all lacking in population, and yet few countries can offer the European in search of property, work and cheap living, more favourable conditions of climate and land than Chile.

The free immigrant, that is to say the man who visits the country without taking upon himself any duties whatever, is able to enjoy the following privileges:

1. He receives from the General Agency for immigration and colonisation in Paris (2, Square La Bruyère) a ticket at considerably reduced price; in many cases a reduced fare upon the European railways is also granted him.



MUNICIPAL THEATRE AT SANTIAGO.

2. Free passage on the Chilian railways as far as his place of destination.
3. Free entrance for his travelling effects and work tools.
4. If he require it, rights as a citizen of Chile after residence for at least one year in Chile.

The above mentioned agency gives further details.

Colonists going to Chile with their families and receiving from Government a portion of land, have also besides these the following advantages:

1. Government gives them as property a portion of land of not less than 40 hectares, on the sole condition that they shall cultivate the land in question.

2. Prepaid passage for the colonist and his family and free passage in Chile to the colony.
3. Definite pay for the colonist and his family during the space of one year.
4. Oxen and implements at cost price.

The following are some of the wages paid at the present day in the towns of Chile. We may remark that in these data the money used is the gold standard, so that 1 peso = 100 centavos has a value of 1 shilling and 6-pence, or 1,50 Mark, or 1,87 Franc, or Lire.

Bricklayers earn 2,50—4,00 pesos per diem; carpenters 2,00—5,00 pesos per diem; joiners 2,50—5,00 pesos; engineers 3,50—8,00 pesos; tailors 4,00 pesos; private coachmen 30,00—50,00 pesos per month plus board and lodging; farmers 25,00—100,00 pesos per month plus free board and 20—25 % of the harvests; gardeners 30,00—200,00 pesos per month; vine-dressers 1000—2000 pesos per annum. It should be borne in mind that the usual victuals are cheaper throughout the whole of Chile, especially in the smaller towns, than they are in Europe; clothes too and shoes not imported from Europe are little more expensive. An empty room costs 4—5 pesos per month, a small house of 3—4 rooms, a court-yard and appurtenances 25—45 pesos per month.

Travellers or emigrants would do well to note that the journey to Chile can be made via Panama or Buenos-Ayres and the Strait of Magellan.

The first route of the two has the disadvantage of the hot climate in the isthmus, but the sea is calm. The second route is shorter and lasts only 23 days, but must be taken between November and May. The service via the Strait of Magellan is the more comfortable because it is not necessary to change; the passage lasts 30 days. The cost of passage is not great when it is taken into consideration that the traveller has no extra expenses on board the steamer. There is a good service of steamers from Europe to Valparaiso.

FIFTH CHAPTER.

COMMERCE.—IMPORT AND EXPORT.—RAILWAYS.— POST AND TELEGRAPH.

COMMERCE.—There are 56 seaports and 21 passes over the Cordilleres for import and export. The most important harbours especially for foreign commerce are situated from the north to the south: Pisagua, Iquique, Antofagasta, Valparaiso, Talcahuano, Valdivia, Puerto Montt.

All these harbours are connected by railways with the interior of the country.

IMPORTS.—The total commerce, import and export, amounted in 1900 to 297,000,000 pesos, the peso being reckoned at 18 pence. The imports amounted to 128 million pesos and the exports to 169,000,000 pesos.

Compared with 1899 the import in 1900 has risen to the amount of 22,000,000 pesos. The export exceeded the import by 40,000,000 pesos.

The import has increased on cashmir, flannel, cotton stuffs, pocket handkerchiefs, hats, spermaceti candles, coffee, tea, all wares used in great quantities by the poorer classes. Besides this the imports have shewn a great increase on articles used in commerce, for example: steel, leather, iron, raw cotton for weaving, pinewood, machinery, and newspaper paper. The import has fallen off on articles of distinct luxury, which according to the law of 23^d December 1897, have their value as per invoice burdened with a duty of 60%. Of these goods 1,7 millions were imported in 1898 against 4,400,000 in 1897.

Besides this the import of cattle from Argentina has decreased, and this can be explained by the increase of the import duty levied in the interest of Chilian cattle breeding.

So in 1895 108,000 heads of cattle were imported into Chile from Argentina, in January 1899 only 27,500 which made a difference of 8 million pesos.

The imports can be divided in the following manner so that only the most important countries and those of most interest to our readers are given:

Nations	Value of Import	
	1898	1899
Great Britain	\$ 38 400 000	44 350 000
Germany	26 300 000	29 750 000
United States	9 300 000	8 200 000
France	5 300 000	5 525 000
Argentine Republic	3 700 000	2 186 000
Italy	2 070 000	2 540 000
Spain	390 000	487 000
Sweden and Norway	5 600	15 000
Austria	1 900	000
Belgium	814 000	1 022 000

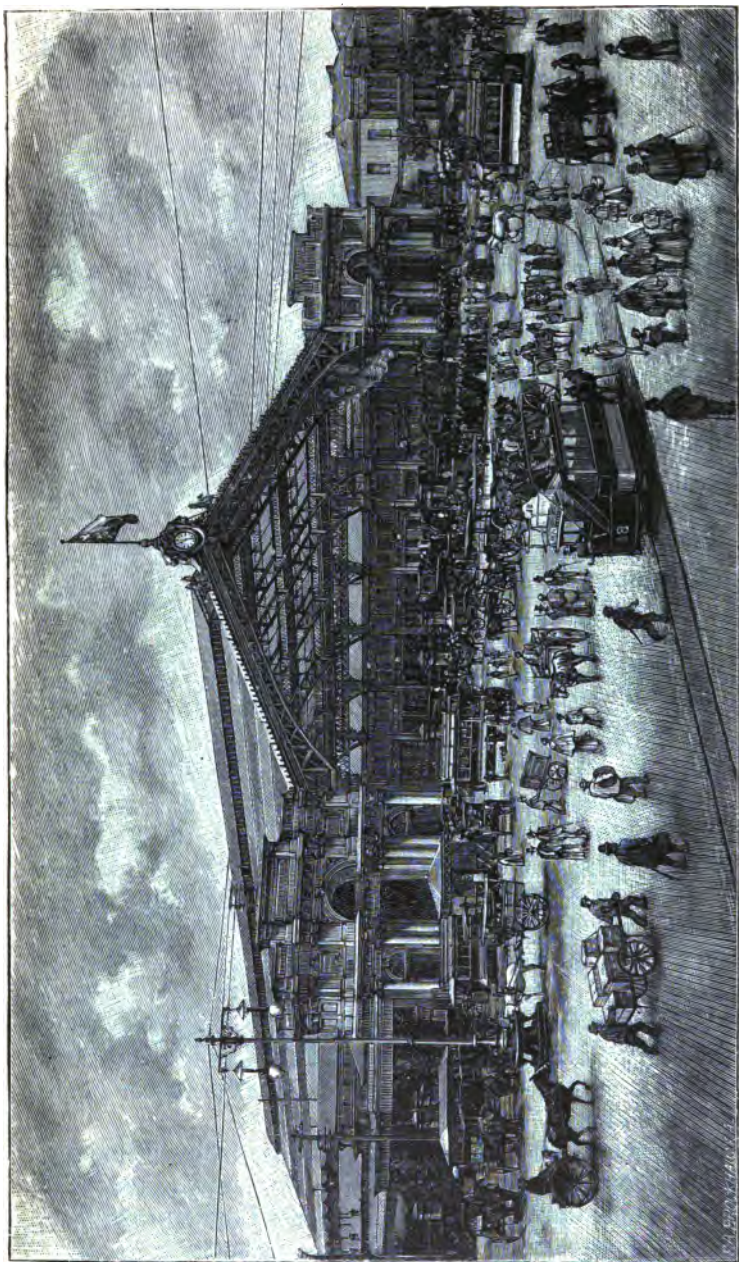
EXPORTS.—The exports of 1900 showed an increase on those of 1899 of 5 million pesos; this is the greatest amount of export ever known in Chile. The increase of the exports is to be explained nearly entirely by the development of mining and by the greater use of Chile saltpetre which during the last few years was sold at a very low price, and by the increase in the price of copper, the consumption of which is becoming greater in the whole civilised world.

Some thirty years ago Chile was the first copper producer in the world.

The exports go chiefly via Valparaiso and Iquique, and in 1898 amounted to respectively 27,2 millions and 65,3 millions per harbour.

We give below a list of those articles and products which in 1899 shewed a remarkable increase in exports.

There were exported: of raw borate of lime 2,242 mill.,



CENTRAL STATION AT SANTIAGO.

oats 2,243 mill., honey 0,856 mill., lump coal 4,813,000, copper in bars 14,929 mill., copper ore 3,586 mill., iodine 4,10 mill., Chile saltpetre 96,65 mill. pesos.

The export in copper continues to increase both in value and quantity, as a result of the increase of price and the great demand for this metal. In 1897 each ton cost £ 49,26; in 1898 £ 51,16 and in 1899 £ 73. The export in 1899 amounts to 25 million pesos at 18 pence and can be estimated at about 25,000,000 tons. The inland or coast trade between the different harbours of the provinces of Chile is most important.

This trade can be easily understood when we realise that nearly all the productions of agriculture and cattle-breeding necessary for the food of man and beast in the northern zone of the country are imported from the central provinces, while many productions of the northern mining zone have to go to the other end of Chile for their working up or satisfactory shipping. The *Compañía Sud Americana de Vapores*, the most important of the companies on the Pacific Ocean, possesses splendid passenger- and cargo-steamers and manages the service between southern Chile and California.

The interior commerce of the country rose in the last statistical year of 1899 from 18,368 mill. pesos in 1898 to 214,159 mill. pesos. The harbours of Chile are in the most regular connection with all parts of the world. Into these harbours came in 1899 from foreign parts: 558 sailing ships of 777,000 tons, and 1353 steamers of 2 million tons. For the coast trade during the same year there entered: 973 sailing ships of 649 785 tons and 4483 steamers of 5,989,000 tons. Among the sailing ships the foreign ones were: 121 German, 291 English, 48 French, 12 Italian, 10 Norwegian, 26 Chilean. The steamers were: 766 English, 307 German, 11 French, 1 Norwegian, 2 North American, and 264 Chilean.

The coast trade is carried on by sailing ships belonging to the following nations: English 184, German 61, French 23, Italian 6, and Chilean 574, and by 1732 English, 376 German, 2 Norwegian, and 2370 Chilean steamers.

These data shew how important is the Chilian commercial fleet. The fleet has moreover increased considerably during the last few years.



GALLERY SAN CARLOS. SANTIAGO.

Before closing these detailed accounts of Chile's trade we must say a few words about the destination of the products and wares exported from the country.

In 1899 there was exported to Great Britain an amount

CHILE.

4

worth 110,500,000 pesos; to Germany 21,000,000 pesos; to France 9,550,000 pesos; and to the United States 7,400,000 pesos.

The reader must know that a considerable amount of the Chilean products imported into Great Britain, especially saltpetre, does not remain in that kingdom, but is again exported to the European continent, especially to Germany, where it is worked up and used.

It can be seen from these data, which are drawn from the statistical service, that the trade of Chile is developing quickly; the foreign trade figures show an incontestable improvement, which is shown in an increase of the export and import.

RAILWAYS.—We will give a few details about the railways, which all belong to the State. The assets or estimated value of these railways amounted in 1898 to 84,9 mill. pesos. Of this sum rails and lying stock amounts to 58,8 mill., rolling stock to 18,1 mill., warehouses, coal and sleepers 2,0 mill.

The majority of the new railways are in old Araucania, in the present centre of agriculture and colonisation of the country. The receipts of last year 1898 amounted to 3,7 mill. pesos and the expenses to 2,7 mill., so that only a balance of 1 mill. remained. The plant- or building capital of the railways paid interest of 1,15% which result is not to be accounted for by bad management, but by the lowness of the railway tariff.

The number of passengers carried in 1898 amounted to 5,527,388, of which 18% were first class, 13% second, and 69% third class. Goods were carried to the amount of 20,2 mill. double cwts. at 100 kilograms.

In the beginning of 1899 there were 1986,5 kilometres of metropolitan line working.

Of these 517,5 kilometres were in the northern zone, and 1,469 in the central, and in a part of the southern zone. The southernmost line is that running from Valdivia to Osorno with its branch lines in Araucania.

There are in Chile besides a network of private lines with a length of line amounting to 2300 kilometres, mostly

in the mining zone of the north; these lines bring high dividends to the proprietors or shareholders. The most important are: the saltpetre line from Iquique to Pisagua towards the north and to Lagunas towards the south, with numerous side lines: total length amounting to 482 kilometres; the line from Antofagasta to the interior of Bolivia as far as Ollagüe amounts to 442 kilometres the line from Taltal to Cachinal with side lines amounting to 212 kilo-



HUÉRFANOS-STREET. SANTIAGO.

metres; the line from Caldera to Copiapó amounting to 242 kilometres. There are therefore in the republic of Chile altogether 4286,5 kilometres of line, most of which have been built since 1882.

The first railway in the whole of South America was that connecting the harbour of Caldera with the town of Copiapó; it was given over to traffic in July 1852.

At the same time the first telegraph line was laid; Chile too has the honour of having provided the first gas works for public lighting.

Besides its excellent sea ways and canals and bays and harbours and railway network, which latter is fairly important, Chile possesses 70,000 kilometres of public thoroughfares, 40,000 kilometres of country roads, all of which are kept up by the municipalities and private individuals, and 78 navigable water ways on lakes and rivers with a total length of 4600 kilometres. The railway which will be of the greatest importance for Chile is that which connects San Felipe de los Andes with Mendoza and the main lines of Argentina. This line, which is for the most part completed, goes over the pass of Uspallata at a height of 4000 metres; a large tunnel is to be built in the pass.

Each state will complete its line as far as the boundary line on the peak and in the tunnel.

Post.—Chile has belonged to the Union Postale since 1881. The postal service is under the surveillance of the minister of the interior. Newspapers are forwarded gratis in the interior of the country, and the carriage is very low. Thus is explained the fact that the receipts of the postal service in 1898 only amounted to 953,128 pesos, while the expenses totalled 1,028,333 pesos.

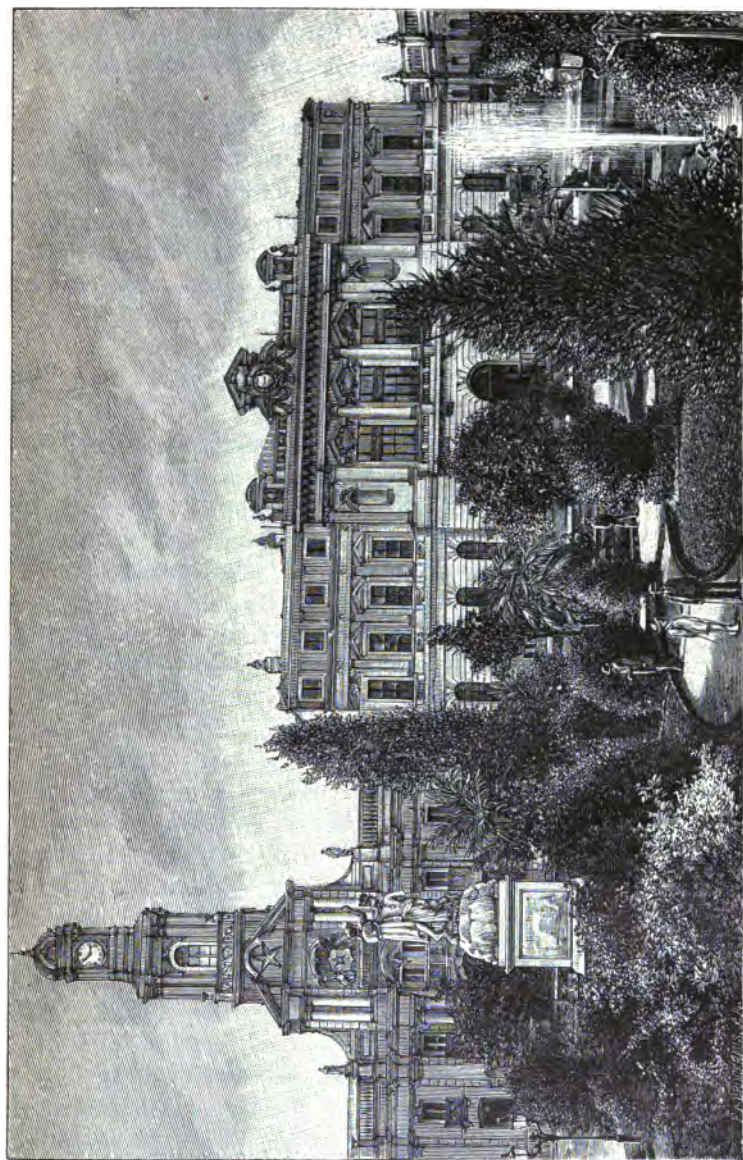
TELEGRAPH.—The length of the telegraph lines amounts to 16,052 kilometres and belongs almost entirely to the State.

In 1898 the telegraph network was increased by 504 kilometres. The law authorizing the State to lay a cable between Puerto Montt and Punta Arenas, has already been passed.

This is of the greatest importance and highly necessary, especially for trade, since the whole steamer traffic to the Pacific Ocean passes through the Strait of Magellan, whilst only the sailing ships take the longer route round Cape Horn.

There exists also along the railway of the north a telegraph system belonging to private individuals and 125,04 English miles in length. The telephone service is especially good in the towns and is developing also in the country.

The trans-Andes telegraph passes the peak of the Cordilleres in 3 subterranean cables of a total length of 52 kilometres.



INTENDANCY AND TOWN-HALL. SANTIAGO.

A company maintains one cable along the coast of Chile, connecting the harbours from Arica up to Talcahuano with one another, by which Chile is connected with all parts of the world.

There exists moreover an American company, the telegraph system of which is situated in the centre of the Republic and which has a length of 1136 kilometres.

The post offices of Chile are celebrated for the regularity and reliability of their service. It very seldom happens that articles committed to the care of the post, either going to or coming from Chile, are lost.

SIXTH CHAPTER.

ANIMAL KINGDOM. — CATTLE-BREEDING. —
PLANT-KINGDOM. — AGRICULTURE.

ANIMAL KINGDOM. — The animal kingdom (Fauna) of Chile is relatively poor in species. Amongst those that are harmful to man there is only a little spider, which is found in the South and is called by zoologists "*Latrodectus formidabilis*", and by the people "*Araña venenosa*".

Especially small is the number of large mammals. The American lion (*Puma*, *Felis concolor*) is a cowardly creature, which however sometimes does harm to cattle and poultry. These are two species of wild cats, *Felis pajeros*, and *Felis tigrina*. Amongst larger mammals that are to be hunted, there are two kinds of stags in the country, the large one as represented in the Chilean arms "*Huemul*" (*Cervus Chilensis*), which is especially common in the southern woods, and the very ornamental and small "*Pudu*" (*Cervus humilis*) which is found in the woods in the province of Valdivia and in the island of Chiloé. Still more common than this ruminant, which is almost unknown even in the European museums, is the original form of the Llama, called the Guanaco.

The Guanaco is to be found on the high table meadow land of the Cordilleres and is found also along the south coast and forms the main staple of food amongst the Ona-Indians in the Terra del Fuego. Amongst the water mammals the most frequent are the sea-lions (*Lobos*), one species of which (*Otaria jubata*) is to be found along the whole

coast, but has a worthless skin, whilst two other kinds, the *Otaria Philippii* which lives near Juan Fernandez, and the *Otaria australis*, which lives in the Magellan Strait district, have very valuable hides.

A kind of sea otter (*Lutra felina*) which has unfortunately now become very rare, has a very valuable skin. Along the coast the traveller sometimes has an opportunity, especially in the South, of observing whales; they appear though in too small numbers to be worth the trouble of hunting. Whalers' stations are to be found on the island of Santa Maria and in the Talcahuano Bay.

There are several kinds of dolphins to be found in Chilian territory. The skunk or "stink-animal" which has every right to bear its name, is interesting and exists in two kinds in the South. They are hunted for the sake of their beautiful skins and by way of defence emit a most fearful stink from a gland. More numerous than any other mammal are the rodents of which two, the "Chinchilla" (*Chinchilla laniger*) and the "Viscacha" (*Lagotis criniger*), are valued on account of their skins. The former is the size of a large rat, the latter of a rabbit. Whilst rats and mice are found wherever man dwells, the voles (*Ctenomys magallanicus*) infest the prairies of the Terra del Fuego, so that the ground is in parts bored just like a sieve.

Birds exist in about 250 different kinds.

The most frequent is the bird found on the Chilian coat of arms, the condor, called Buitre (*Sarcorhamphus gryphus*), being a large vulture spanning 3 metres, which scans the whole country for miles around from a height of 7000 metres in order to swoop down upon fallen draught-animals and other corpses. There are two other carrion vultures, but not important ones; the waters and coasts are inhabited by geese, ducks, divers, seagulls, a kind of pelican and many other birds, whilst among inland birds sought after by hunters are pigeons, partridges and thrushes, etc.

To mention birds of brilliant plumage, there are 3 kinds of parrot, 5 of humming birds, the latter being observed in the Andes and close to the glaciers on the Strait of



PLACE OF THE CONGRESS. SANTIAGO.

Magellan. Amphibia are represented by frogs as large as a child's head (*Calyptocephalus Gayi*) and the *Rhinoderma Darwini*. There are no crocodiles in Chile. Fish fauna are plentiful both in the sea and in fresh water, many favourite dishes being made of them as for instance Pejerrey; fish is especially plentiful near Juan Fernandez and promises great things in the future for commerce. Quantities of oysters and other sea creatures are found near Chiloé and in other points along the coast. The insect world in Chile is comparatively poor in species, especially in beautifully coloured butterflies. Mosquitos and sandflies, these pests of the tropics, are unknown in Chile. A large stagbeetle (*Chiasognathus Grantii*) is common near Valdivia. There are many kinds of crabs which have an excellent taste, of which we will mention here only a kind of river crab and the "Langosta" (*Palinurus frontalis*), which latter is found in such enormous quantities off the coast of Juan Fernandez that people have often tried to introduce the kind at Valparaiso. The sea is rich in mussels and snails of the most varied kinds, which form the main staple of food for the poor inhabitants on the coast and in the Terra del Fuego. The larger *Mytilides* (choros) and oysters (*Ostras*) are extremely common and very nice to the taste, so that they are preserved in great quantities in factories which are arranged according to all the newest methods.

With regard to the exploitation of the riches of the sea as far as fish is concerned, it may be mentioned that the Government has just concluded a contract with a German zoologist who is to examine this question in the South; it is hoped that industry will benefit by it in the future. The whole north coast of Chile, especially the neighbourhood of Iquique, is very rich in fish and most kinds are very nice to the taste. The catching of the fish by small nets is rendered very difficult by the steep rocky coasts, and by the fact that the bottom of the sea is covered with numerous rocks which often tear the nets; the sea too is very deep. Dynamite is often used for killing fish, especially on the north coast. After firing off a charge

of dynamite, hundreds of fish appear stunned or killed on the surface. It would be worth while to start fishing in the high seas on a large scale and in European manner either from the islands of Juan Fernandez or from a spot on the north coast. — Fishing is often carried on from the coast of Chiloé by erecting barriers of underwood in the sea parallel with the coast, these are covered by the tide, and when the water goes back again at the ebb, a



RACE-CLUB. SANTIAGO.

certain number of fish remain behind these barriers and can be easily caught.

CATTLE BREEDING.—Domestic animals are the same in Chile as in Europe. The Chilian horse is elegant in shape, possesses great lasting powers and is not over particular about its fodder.

It originates from Andalusia; the race itself has been improved during the last 20 years by introduction of stallions from England, Germany and France. In order to improve the breed of races and thoroughbreds large

racers are held every year with big prizes; horse shows are also held with the same object in view.

Every year too there are shows held for draught horses, oxen, sheep, goats and swine.

The number of goats and pigs is relatively small and little has as yet been done for the improvement of the breed of pigs.

The breeding of oxen by no means supplies the needs of the country, but undoubtedly it will increase in time, as high duties are being laid upon the import of oxen from abroad. To improve the breed of bulls the latter are mostly imported from Durham. In the South of Chile, especially in Patagonia sheep are reared in great quantities both for the sake of their meat as well as for their excellent wool. Sheep and cattle with the exception of a number of better class milch-cows, which remain in the towns, remain day and night in the open pasture-lands, which is rendered possible by the mildness of the climate of the country.

The milk industry has improved lately too in every respect and in 1898 154,000 kilograms of cheese worth 93,000 pesos were sold from Chilean harbours to the neighbouring republics or to passing ships. The same market had 107,827 kilograms of butter at a value of 129,392 pesos, all of which was exported in the same year.

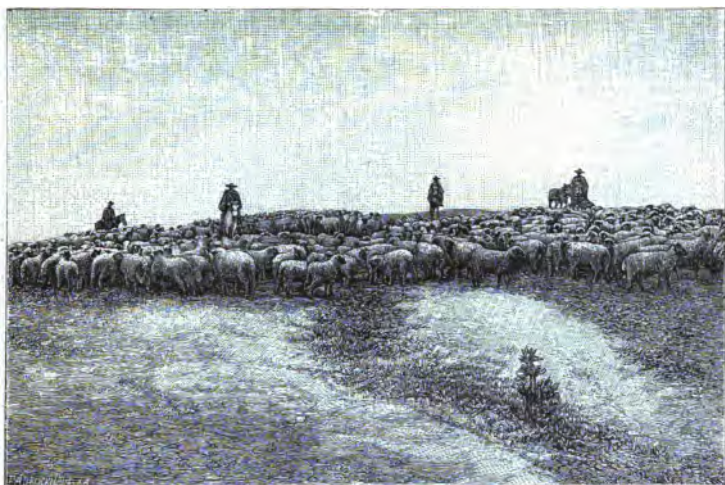
The bee industry is also very extensive; in 1898 alone 2,812,728 kilograms of clarified honey were exported exclusively to Europe with a value of 561,545 pesos.

271,370 kilograms of wax valued at 407,058 pesos were exported to Europe.

The centre of cattle breeding is at present the southern part of the Magellan territory. Although accurate data about the number of oxen and sheep in those regions are lacking, it is maintained, and rightly so, that the breeding of cattle is still capable of great improvement. There are 8 millions of hectares of wooded land, suitable for cattle breeding. The Government is endeavouring to form a regular steamer connection between Punta Arenas and the harbours of the centre and north, in

order that the results of cattle breeding may be easily and safely forwarded to the places where they are needed.

An English steam-ship company already sends living and frozen sheep regularly to Liverpool. The land suitable for cattle breeding is not sold, but let out to those interested therein and by public auction. The tenants are almost exclusively foreigners, chiefly Englishmen, and the portions of land extend from 5000—30000 hectares. By



FLOCK OF SHEEP.

the end of 1898 193267 hectares were surveyed, of which 159,966 were let or occupied either on the ground of provisory title of possessorship or entirely without title. Besides that there were 33,300 hectares, the rent-contracts of which had run out.

PLANT KINGDOM. — The number of different plants in Chile is very large, a fact that can be easily explained by the extension of the country towards the north and south and by the change in altitude. Professor Dr. R. A. Philippi, the director of the museum in Santiago, and the majority of the explorers of the country, has done much

towards the increase of our knowledge about the Chilian flora. The northern zone is, on account of its scarcity of water, very poor in plants.

Fairly rich vegetation in this zone is only to be found on the rough table-land, in the sandy deserts, and in the stretches of country possessing different kinds of salt, where there are a few fresh water rivers and streams.

In the valleys of these watercourses there is for the most part tropical, luxuriant, vegetation and vegetables



ALAMEDA. SANTIAGO.

and fruit trees of the most varied kind prosper there. It can be taken as certain that a large portion of the at the present time absolutely uncultivated high plateaus of Tacna and Tarapacá was covered with woods before the arrival of the Spaniards, and even at the time of the conquest; remains of these woods have been observed in many places in fossil state. It is supposed, on the ground of careful examination of the subterraneous water conditions that it will be easy to render a large part of these tracts useful for agriculture with the help of artesian wells. It

would be still more practical to construct damms or artificial lakes to take up the winter rains so as to make use of the water in the summer for irrigation purposes.

We cannot go further into detail here respecting the rich plant world of the central zone. The climate there is almost the same as in Italy, except for the extremes of temperature, which are more moderate in Chile. Of timber wood should be mentioned the Quillai (*Quillaia saponaria*), the bark of which when in water is much the same as our soap, and is therefore generally used for washing with; the Peumo (*Cryptocaria Peumus*) with



HARVEST.

edible fruit and the *Lingua* (*Persea Lingue*); the *Roble* (*Fagus obliqua*), a tall tree common to the whole country; the *Laurel* (*Laurelia aromatica*); a kind of pine, *Lleuque* (*Prumnopytis*), which is only met with in the southern part of this zone.

Here too is found in great numbers the *Rauli* tree (*Fagus procera*), and also a splendid, tall pine tree for which the whole of *Araucana* land is characteristic, the *Pifion* (*Araucaria imbricata*), the seed of which is edible and the wood much valued.

This whole zone is in consequence of its high state of culture almost entirely free of wood. Woods are only to

be seen on the eastern side on the high slopes of the hills where they are utilised for cattle pastures.

AGRICULTURE.— The chief cereals are wheat, linseed, barley, oats etc. Chilean wheat is highly valued in the markets of the world, and up to 25 years ago Chilean wheat flour supplied the countries on the Pacific coast right up as far as Mexico. Lately however it has had to yield before the North American flour. Vine cultivation extends far and wide, especially in the neighbourhood of Limache and Santiago, and the production is large though little known in the markets of the world. Chilean wines, which gained a first prize at the Paris exhibition of 1889, deserve to be introduced into Europe, for they are very similar to the best Bordeaux wines. The Chilean vineyards have cost millions, and all in order to attain the best results. All European vegetables and fruit trees, the enumeration of which is unnecessary, flourish excellently in this zone. Especially is this the case with peach and apple trees and potatoes, whose home, as everyone knows, is in Chiloé.

Owing to the extensive, well arranged, and carefully managed irrigation, through which the numerous water-courses are held up and utilised, as they come down in the spring from the Andes, it is possible to cultivate the land to a relatively high point and without any help from manure, which is used only for gardens. Several sorts of beans are cultivated; maize too is grown very much. In the southern part of this zone is produced the Quinoa (*Chenopodium Quinoa*), an old Indian form of food, much like our buckwheat. Tobacco, flax and hemp thrive well. For fodder extensive use is made of Alfalfa (*Medicago sativa*), which is the main staple of food for animals and is sent to the various northern harbours of the country and to the other harbours of the Pacific Ocean. Great quantities of the European kinds of fruit are produced in the country and mostly in excellent quality.

Fruit is preserved in the most modern methods and exported to Europe, where it has met with universal approval.

The most common form of food in the country is beans.

Of these there are various kinds, all very nice and most nutritious. As there is still much fruitful land lying uncultivated between the 34° and 42° southern latitude, agriculture can still improve very much. To do this however it is necessary that there should be continual immigration from Europe and introduction of all the new agricultural acquisitions, for the landowners of the present day are in need of workmen and modern machinery.

There are two agricultural societies and one vine-producers' society in Chile, and they both have their headquarters in Santiago and Concepcion; they publish first class monthly periodicals and are always ready to give every possible information to people interested in these subjects.

SEVENTH CHAPTER.

MOUNTAINS.—WATER SUPPLY.—MINERALS.— MINING-LAWS.

MOUNTAINS.—Chile is a mountainous country and properly speaking can only be regarded as the western slope of the enormous chain of the Cordilleres de los Andes.

The latter, like those situated north and south of the Andes, are relatively speaking of younger origin and owe their existence to volcanic eruptions. Before the appearance of the Andes there existed already the Cordilleres of the coast, consisting of much older rock, and they can be traced about from the valley of the Camarones in the north to the southern end of the territory and again in the islands of southern Chile. The valley situated between these two main chains or masses of hills falls away from the North in a southerly and from the East in a westerly direction and is crossed by numerous side chains from both ranges, especially between the 32° and 35° southern latitude.

North of the 27° the Cordilleres de los Andes divide up into several branches, of which one bounds the Puna (high plain) of Atacama in the East, and another nowadays forms nearly in its whole length the boundary between Puna, which has by the court of arbitration fallen to Argentina, and the Chilean territory.

The northern portion of Chile from the 27° onwards is a high plateau with numerous extinct volcanoes ranged in rows from the North to South. From the North down to the Chacao canal (42° southern latitude) the coast is

very poor in bays and natural harbours, and the sea nowhere encroaches on the land. — There is only one little island near Iquique, then the peninsular and bay of Mejillones, then much further south the bay of Talcahuano with the island of Quiriquina, the bay of Arauco with the island of Santa Maria and the broad mouths of the Valdivia and Maullin. From the 42° onwards the coast is very much torn away, numerous canals penetrate far in inland, cliffs rise up from the sea and a very big number of large and small islands congregate in front of the continent. The majority of the islands in question are still uninhabited and many of them would undoubtedly prove eminently adaptable for cattle breeding.

Chile possesses at different distances from the coast, besides the islands already mentioned, the groups of islands of San Felix, consisting of the islands of San Ambrosio, San Felix and the Easter island or Rapa-Nui.

The most important group of islands is that of Juan Fernandez, about as high as Valparaiso, consisting of two islands, only one of which is inhabited. It was in Juan Fernandez that Robinson Crusoe went through his adventures. It is impossible here to enumerate the individual islands and groups of islands of the province of Chiloé.

The main passes, which lead over the Cordilleres and serve travellers, postmen, and cattle passing between Chile and Argentina, are: the Planchon pass, on the slope of the Vulcan of Peteroa in the province of Curicó, 3046 metres; the pass of the Valle Hermoso, in the Cordilleres of Aconcagua on the Rio Putaendo, 3637 metres; the pass of Uspallata, on the road on the side of the Rio Aconcagua to Mendoza, 3928 metres. This is the most used of all the passes. Close by it the Trans-Andes pass, now in course of construction, will bore through the Cordilleres, so as to connect Santiago with Buenos Ayres. The San José pass in the province of Santiago, between the volcanoes of Tupungato and San José, 4200 metres high; the pass of Comecaballos in the province of Atacama on the way to the Argentine province of Rioja,

4423 metres high, and finally the pass of La Laguna on the way to the Argentine province of San Juan, 4747 metres high.

The highest points of the Andes are: the Aconcagua, 6970 metres high (according to the measurements by the German savant Guessfeldt), Mercenario 6795 metres ($39^{\circ} 59'$ southern lat.), Tupungao 6710 metres ($33^{\circ} 25'$ southern lat.), the volcano of San Jose 6096 metres ($33^{\circ} 41'$ southern lat.), and the Juncal 5943 metres ($33^{\circ} 10'$ southern lat.). The Aconcagua is considered to be the highest mountain in America.

The Cordilleres along the coast, which are characterised by their rounded peaks and gentle slopes, have an average height of 1—2000 metres, and their peaks are covered with snow only for a short part of the winter. These Cordilleres are intersected by numerous rivers, most of which have broad valleys, and are thus divided up into individual sections. The eastern slopes and valleys thus formed are for the most part very well cultivated.

The highest point of the Coast Cordilleres is the Cerro del Tayo ($32^{\circ} 39'$) with a height of 2315 metres.

WATER SUPPLY.—Amongst the numerous lakes quite a number are situated in the mountains themselves at a height of up to 4000 metres.

Of these the most important is the Maule Lake, from which flows the river of the same name.

Far more numerous than these are the lakes at the foot of the Andes, which in the northern provinces are for the most part dried up and present themselves in the form of salt expanses and salt marshes. Under the term salt though must be understood not only cooking salt but chiefly sodaic and magnesia salt in large quantities.

Of real lakes, from about the 38° onwards, can be mentioned here: the relatively small lake of Guchueltui or Guulletua, from which flows the largest river in Chile, the Bio-Bio. From the lake of Villa-Rica near by flows the Rio Tolten, while the Rio Valdivia rises from a succession of connected lakes.

Chile is rich in rivers, although those in the Northern

provinces mostly flow through sand or salt marshes, so that their water is often useless owing to its high percentage of salt.

Such is the case for instance with the huge river Loa. Most of these rivers do not reach the sea. The rivers most abundant in water pass through the centre of Chile and very few are navigable in their lower courses, for the



PALACE EDWARDS IN THE CATHEDRAL-STREET. SANTIAGO.

waterfalls in these rivers are very strong, especially in the winter and spring.

Of such rivers we must mention besides the Bio-Bio, the Calle-Calle or Valdivia, the Maule and the Maullin. Navigation in the lakes of southern Chile is still in its infancy and when the country becomes more colonised will have a great future. It will render it possible to exploit large territories of land hitherto uninhabited.

MINERALS.—It has been long known that the long extent of land called Chile which is intersected by the

Cordilleres, contains considerable quantities of nearly every kind of metal. The immensity of the mineral wealth has been statistically proved in a publication compiled by the wellknown national company for mining in Chile.

This work, published at the end of 1898 in large-folio, is entitled "General report on the mines of the Republic of Chile 1897". This work gives in tabular form on 120 pages all the mines in the different departments beginning with the North. Thus definite proof is given of the enormous wealth existing in this country and still to be exploited. The above mentioned tables give the names of the mines, the proprietors, the size of each mine in hectars, the produce of each, and the sum to be paid for the patent according to the law (Title 12, Mining codex of the 20th December 1888). In these tables are registered more than 4000 mines for which patents are being or have been paid.

There is gold in large quantities in the whole country, but means are wanting for its exploitation, and therefore there are only few mines or washing stations working to any large extent. The production of gold was far larger in the times of the Inkas and at the beginning of the Spanish dominion than it is to-day. As early as the 18th century Chile held the third place among gold producing countries and produced as much as 300 hundredweights per annum. In 1898 Chile exported 1,630,496 grams of gold, which is equivalent to a value of 2,400,000 pesos. Besides this 8511 kilograms of mineral containing gold, mostly quartz, were exported. Also a very large proportion of the silver mines here enumerated are still lying almost unused or even not at all begun.

The richest silver ores are to be found on the slopes and high plateaux of the Andes at a height of from 2—3000 metres; these slopes and plateaux are very poorly supplied with water and woods. Silver is found mostly in alloys of chlorine, bromine and iodine or as massive metal. Courses of argentiferous galena are very often found on the lower slopes of the Andes. Also in copper ores silver is sometimes contained.

In 1898 Chile exported 6,9 million pesos worth of silver and 205,000 pesos worth of silver ores, which, like gold ores, are mostly metallurgically worked in Germany.

It is probable that the country's silver production will increase, as the silver prices have risen and the Government itself has had fairly large masses of silver money coined. At a cursory glance through the lists in the book mentioned the following details will be noticed: In the



BIO-BIO-RIVER AND BRIDGE OF THE SOUTHERN RAILWAY.

department of Tacna 24 mines are given; of these one produces borax, two silver and copper and the rest sulphur.

In the department of Arica are mineral salt, borax and one mine each for silver and copper, gold and silver.

In Tarapacá there are only very few sulphur- and copper mines, but on the other hand countless silver mines and shafts, of which however only a very few are worked. It is striking that the strata of nitric soda and other soda salts (with the exception of cooking salt) remain

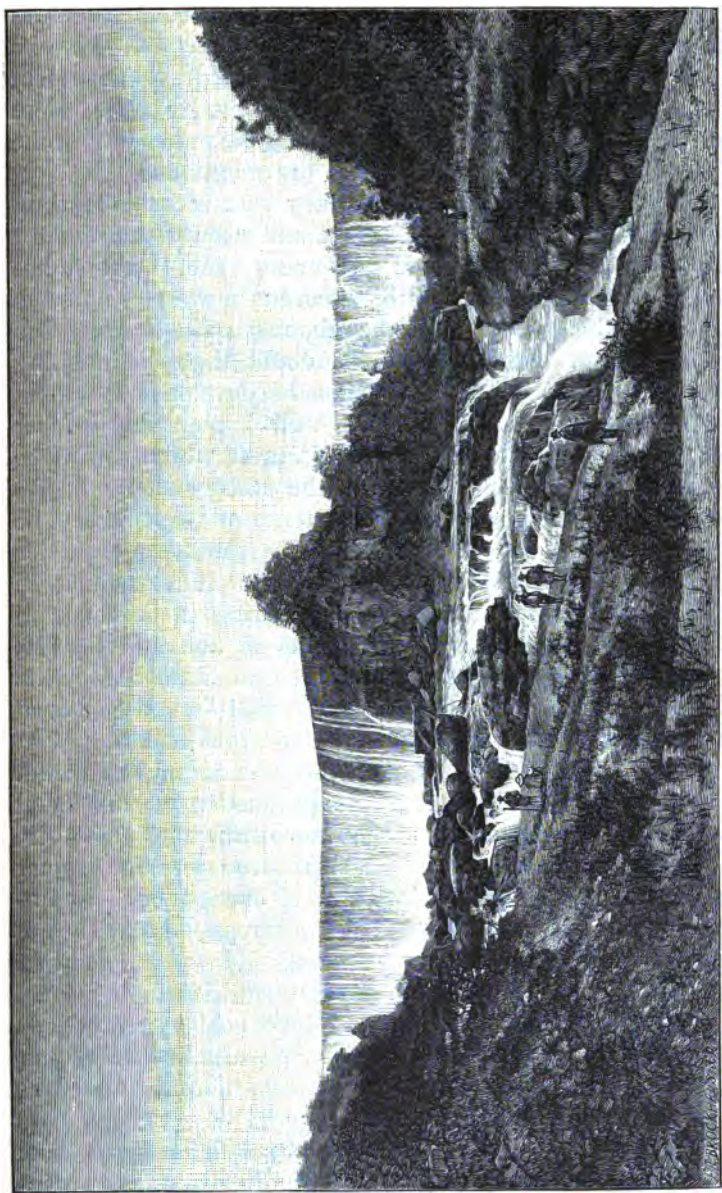
quite unnoticed in this general list or at any rate appear only now and then by way of exception. In the list of the community of Pica are tabulated: kali salts, plastic clay, boric chalk, sulphuric soda, chalk strata, sulphur chalk, aluminium and sulphuric copper; also numerous silver mines, mines containing silver and gold, and finally copper.

In the department of Pisagua gold, silver, and copper predominate. In Antofagasta there appear first of all argentiferous lead ore mines, and there is also carbonic chalk, marble, gypsum, clay and green copperas. Copper mines are very prominent here and especially in the department of Calama.

The copper mines throughout Chile have been much more extensively worked during the last few years, as the price of copper has risen quite considerably. Here is therefore an excellent field for European capital, since nowadays there are numerous copper mines in Chile to be bought at a cheap price or to be received gratis from the Government in pursuance of the very liberal mining laws. In the territory of Cobija only copper is worked, in that of Taltal copper, silver and a certain amount of gold, and in one or two places aluminium.

The same is the case in the other districts.

In the province of Atacama hardly any but copper mines are worked, but some of them produce also gold. Lead only appears quite rarely. In the district of Freirina strata of manganese are found in large quantities and here too the first iron mines are worked. In the next province, Coquimbo, the predominant metal is copper, but magnesia, iron, and in smaller quantities silver, gold and cobalt are also found. Here for the first time mention is made of cinnabar, and copper appears mixed with more or less gold. In the province of Aconcagua the number of mines diminishes; most of them produce copper. In the province of Valparaiso there are also copper mines and gold washing stations. In the province of Santiago is found silver, lead, copper and gold; the same minerals are found in the province of O'Higgins and for the first time



CATARACT OF THE LAJA - RIVER.

mention is made of silver containing arsenic, and quartz mixed with gold.

In the province of Concepcion there are extensive coal strata and some gold washing stations. Finally there are in the province of Valdivia two gold mines and in the Magellan district two coal strata are mentioned.

Chile is well known to be very rich in splendid iron ores. (See Ch. Vattier's beautiful and very detailed work "*L'Avenir de la Métallurgie du Fer au Chili*." Paris, Légation du Chili, 1890. With numerous maps.)

Up to the present day, though, not a single layer has been worked. Still there is no doubt that the working of the iron ores of Chile will soon be developed to a most satisfactory extent. It is also well known that copper in plenty is present, the main strata of which are to be found in the copper districts of the eastern slopes of the Cordilleres on the coast in greenstone and syenite. The copper appears for the most part in the form of oxides and at greater depths mixed with sulphur. Whilst in 1806 only 4 copper mines were working in Copiapó, in 1842 there were already as many as 40 and in 1853 116. In the sixties the copper production in Chile was at its height and the output of the years 1861—64 is reckoned at 3,313,000 cwts. At that time Chile provided 60—67 % of the whole amount of copper produced in the world. As we have already stated the production of this metal has greatly increased in consequence of the continuous rise in the price thereof, and still there are enormous copper strata, the exploitation of which, if carried out circumspectly and thoroughly, would well repay the outlay of capital.

Coal is obtained also in great quantities in the coast districts of Coronel and Lota. In 1898 coal was produced in these two places alone at a value of 4,200,000 pesos, and was sold to the steamers of the different nations as they passed along the Pacific.

MINING LAWS.—The following regulations taken from the mines-codex of the province of Chile, deserve attention. The State is the possessor of all mines containing

gold, silver, copper, quicksilver, tin, precious stones, and other fossile substances, not including the property of corporations or private persons exploited on the surface of the ground, under which these mines lie. Private persons, however, can search everywhere for mines and exploit the mines found, and dispose of the mines in accordance with the regulations of this codex. Free acquisition of mines containing gold, silver, copper, platinum, quicksilver, lead, zinc, bismuth, cobalt, nickel, tin, antimony, arsenic, iron, chromium, manganese, molybdena, vanadium, rhodium, tungsten, and precious stones by persons is guaranteed, of whatever kind be the form and origin of the layer in question.

The working of coal strata and other minerals not mentioned above is left to the proprietor of the ground. The right of working salt strata on the sea coast and in lakes or lagunes is left to the proprietor of the ground in question.

Despite these regulations the State reserves to itself the exclusive right of exploiting all supplies of guano, wherever they may be situated, as also the supplies of saltpetre or "analogous salts of ammonia" in state or municipal land, where no mining right has already been previously acquired by a private person. The exploitation of auriferous or tin ores sand or sand containing tin ores and all other mineral products of the rivers are declared to be free on all unoccupied ground whoever the proprietor may be. But if the works are carried on in established premises the mining property must be certified. If the existence of a mine is proved, a definite territory on the surface is granted (for the erection of buildings) for the working. Compensation must be paid to the proprietor for this territory and for any wood that may be taken away. The mine proprietor has a right to the pasturage and water bordering on his mine-territory, so far as this land is not cultivated or hedged in. The law allows lasting possession of the mines to private persons on the condition that they pay an annual tax or patent for the surface land occupied by them. If this annual tax be not paid, the mine reverts to the possession of the State.

The right of prospecting and mining on every property is free as long as the land in question is not fenced in or cultivated. In case it is desired to search for mines in the latter, the permission of the proprietor or administrator must be obtained.

If this permission be refused, both parties must refer to the district magistrate, who decides once and for all, sometimes consulting a mining engineer.

The searcher must compensate the proprietor of the ground for all the damage caused by his exploration. No mine may be started or worked nearer than at least 40 metres away from buildings or railways.

All persons who are authorised to possess landed property in Chile, may acquire mines in the legal manner.

Administrators and governors may not acquire mines in provinces and departments under their control. Members of the higher courts of law and district judges, who have to give judgment in mining cases, are not allowed to acquire mines in their circuits. The person who first presents himself for the purpose of registering a mine, shall be looked upon as the discoverer thereof, except in cases of fraud, that is to say in cases in which it can be proved that the discovery was made at a previous date, but the registration of the same by the original finder was prevented.

He who discovers a mine while mining under orders or while an employé of some other person, cannot be considered as the discoverer, but the person for whom he is working or in whose name the work is being done, shall be considered the discoverer. The discoverer on virgin soil has alone any rights for the first fifty days after the registration of the discovery. Each registration must be published three times in a newspaper of the department in question. Anyone having a mine registered (the registrar), is bound, to dig a pit or shaft at least 5 metres deep therein at the latest 90 days after its entry in the books, whereby the presence of workable mineral or ore is proved.

A mining claim is a rectangle of unknown depth and covers one to five hectares of the surface of the ground.

In the case of the exploitation of salt and coal strata a claim can cover a surface of fifty hectares. A possessor of a mine must apply not later than 180 days after registering it for a titled deed for the exploration of the ground in the direction already given by him. The above mentioned mines must pay an annual patent of 10 pesos per hectare; but coal and salt strata need pay only five pesos annually per hectare.

Mines worked on the possessor's own land pay no patent.

If however it is sold or separated from the land under the heading of real property, it must pay 5 pesos per hectare. This annual patent must be paid between the 1st and the 31st March. If this is not done, the mine is sold by public auction to the highest bidder. Abstracted from the amount are the price of the patent and the costs, and the residue is paid over to the former possessor.

Before closing this chapter on minerals it must be mentioned that coal is found not only in the regions of Coronel and Lota but also in different parts of the bay of Talcahuano and the large province of Arauco. Lignite coals are to be found in Valdivia and three other spots not more closely defined.

The heating power of Chile lignite is equal to or greater than the best European lignite.

EIGHTH CHAPTER.

FINANCIAL SITUATION.—INCOME AND EXPENSES OF THE STATE.—SALTPETRE INDUSTRY.

FINANCIAL SITUATION.—The financial situation of Chile, which, as will be shewn later, possesses certain special characteristics, has always remained much the same as regards the income and expenses of the State.

As yet no year has had to shew any appreciable deficit. Indeed in the last two years there has been shewn a considerable balance in the annual budget, which must be attributed to the greater income drawn from the export- and import duties.

As thus the State has at its disposal considerable means, and as besides the armament necessary for the protection of the country is nearly complete, these sums amassed are utilised for the erection of large public buildings.

First and foremost amongst these must be mentioned: the completion of the Trans-Andes railway, the building of new harbours on the coast and of new railways in the interior of the country, as well as the improvement of the hygienic conditions of the towns. Undertakings of this kind are capital well laid out, for they render it possible for a country to exploit and utilize the treasures of nature, so that if this course of action is pursued, Chile will raise itself in a few years to be a flourishing State; for the new elements will create new means, whereby the foreign debts of the Republic may be amortized. When this occurs, Chile will count among the number of those favoured states which do not have to depend upon foreign

credit. There is nothing special to be mentioned about the distribution of the expenses in the administration, except the fact that what in other countries are regarded as extraordinary expenses are considered in Chile as ordinary expenses, viz. the building of railways and fortresses.

The police are paid by the State. As it is not necessary for Chile to maintain a large standing army, about 16% of its income in 1900 was spent in the purchase of weapons; this condition of things is considerably larger in every European country.

INCOME AND EXPENSES OF THE STATE.—We can take the following details about the financial situation of the country from the last report of the President of the Republic, wherein it must be remembered that a Chile peso is equivalent to 18 pence, and that the present paper money in this year 1902 is to be drawn in for gold.

“The financial situation of Chile is satisfactory.

The ordinary and extraordinary receipts in 1900 rose to the sum of 79,793,112 gold pesos and of 46,244,760 pesos of current money, forming a total of 126,037,872 pesos.

The expenses were 30,564,828 gold pesos and 82,143,742 pesos of current money.

After having satisfied all the needs of the State, the financial receipts and expenditure of 1900 ended with an excess of 11,678,714 gold pesos and 6,898,114 pesos of current money, or a total of 18,576,829 pesos, which have been brought forward as funds at the State's disposal for 1901.

Adding the excess in gold of the 18 pence to the receipts calculated in this money for the current year, one obtains a sum of 85,898,714 gold pesos and 37,205,336 pesos of current money, or a total of 123,104,051 pesos.”

In our historical survey we mentioned already that Chile was one of the poorest, perhaps the poorest colony of the Spanish crown in America. The new Republic however received by its independence a greater motive power so that in the decade of from 1831—40 the receipts amounted to an average per annum of 2,100,000 pesos.

In the following decade, up to 1850, the receipts amounted to already as much as 2,400,000 pesos. From 1850—60

they amounted to 6,000,000 pesos and from 1860—70 to 8,200,000 pesos.

In the 5 years from 1871—75 the average annual income amounted to 14,700,000 pesos.

In 1879 the receipts amounted to 15,300,000 and in 1882 to 28,900,000 pesos. Here it should be mentioned that these statements were made in old pesos, which were equivalent to 48 pence or 4 marks or 5 francs.

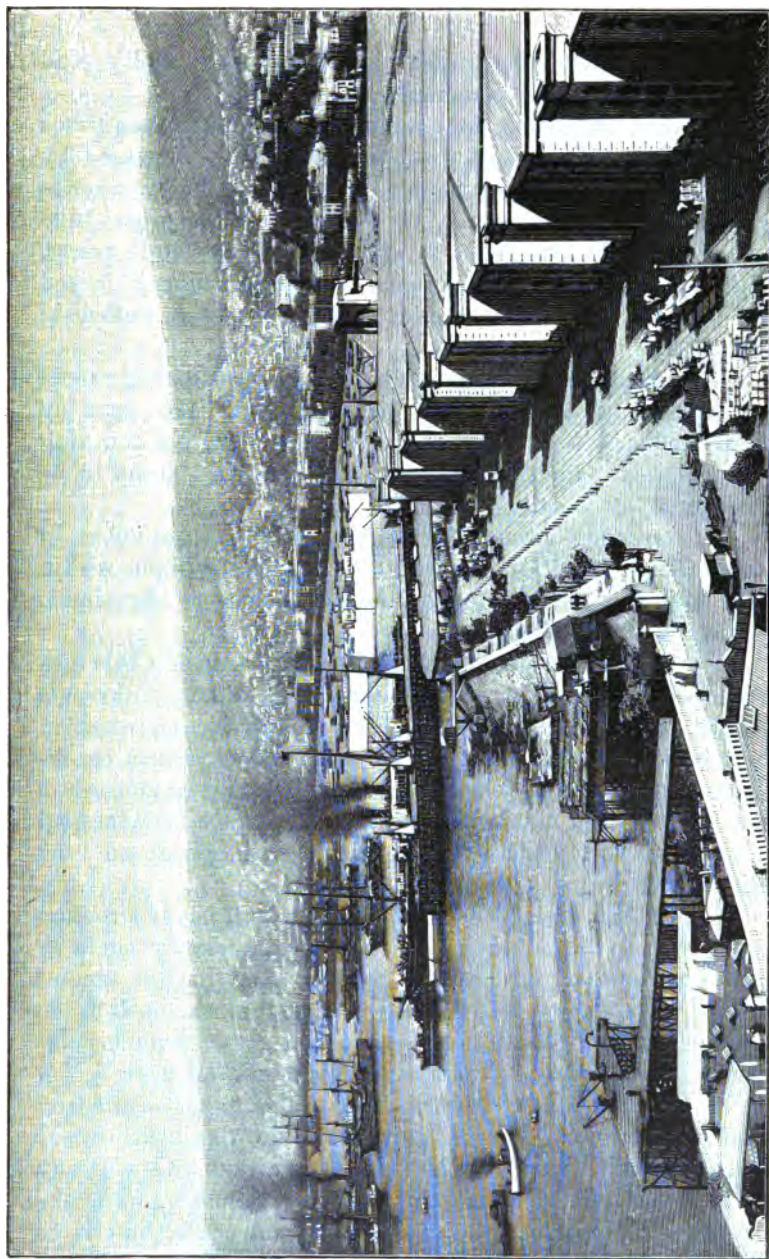
The chief receipts are drawn from the export duties on saltpetre and iodine, and from the high import duties on articles of luxury and all wares which can also be made in the country itself. One can therefore say that there are as few expenses in taxes in Chile as scarcely in any other country in the world.

The national debt in Chile consists of a number of loans, which are explained in the following table:

Year of the loan	Interest and Amortization	State of the debt on the 31 st December 1898
1885	5 %	£ 727 000
1886	5 %	„ 5 480 000
1887	5 %	„ 1 066 000
1889	5 %	„ 1 462 000
1892	5½ %	„ 1 732 000
1892	7 %	„ 139 000
1893	5 %	„ 603 000
1895	5 %	„ 1 959 000
1896	5½ %	„ 3 953 000
1896 (Coquimbo railway)	5 %	„ 260 000
1894 (Municipality of Valparaiso)	7½ %	„ 184 000
		Sum total £ 17 565 000

In 1898 there was paid £ 826,077 for interest, and £ 138,328 for amortization. Of course Chile had raised loans already before abroad, but these debts were collected together in 1885 into one great loan.

Chile's chief creditors are Englishmen. It must here be certified that since her first existence Chile has met



OFFICIAL WAREHOUSES. VALPARAISO.

all her creditors' dues and has always punctually paid off her interest and amortization.

In 1881 the home debt amounted to 61,1 million pesos at 48 pence. It was at that time especially increased by the 28 million in paper money, which Chile had issued to cover the costs of war. At the end of December 1898 the home debt amounted to 72,8 million pesos at 18 pence. But of this 46,6 million pesos was paper money issued in 1898, which paper money will have been called in by 1902.

The fund for the indrawing of the paper money raised at home and abroad will have reached the sum of 27,699,635 pesos at 18 pence by the year 1900, not counting the interest added thereto and the 7,160,000 pesos to be recovered by Bonds.

If one adds hereto the 16,500,000 pesos provided in the budget for 1901 for this object, there will be within the limit of time granted by the law means in abundance with which to effect the recovery.

As we have said, the financial situation of Chile has this peculiarity, that actual taxation is almost unknown. Other revenues are also held in reserve which exist in nearly every other nation. To these belong taxes on tobacco, alcohol etc., which could easily bring in more than ten millions per annum. But this exaggerated economical liberalism will probably have to be changed at no very distant date.

For in the first place the exchequer will have to reckon with certain large public works now necessary such as the drainage of all the big towns. And in the second place the people will have to accustom themselves to paying taxes for that time, when the State revenues derived from the export taxes on saltpetre shall cease.

THE SALTPETRE INDUSTRY. — As the export duties on soda-saltpetre or Chile saltpetre have for the last 20 years been the chief source of income of the State, we will say a few words here about this peculiar industry. The increase of this industry dates firstly from 1883, that is to say when the strata, the chief supplies of which lie in the

provinces of Tarapacá and Antofagasta, came into the possession of Chile as payment of the war indemnity.

Chile saltpetre had been exported already since 1830 as a manure and for the production of nitric acid. The consumption since that date has increased every ten years on an average of 100 %. It can be said that about one third of the saltpetre used in the whole world, is used in factories that is to say in the manufacture of nitric acid, smokeless powder etc.

The other two thirds are used for manure. This particular use has greatly increased especially during the last ten years, for the guano supplies are exhausted, and it has been proved that the Chile saltpetre is the most effective of all nitrogenous manures. It contains from 15—16 % of nitrogen, which can be easily absorbed by the plants. English capitalists especially have erected in the last 18 years model institutions (officinas) containing the best machinery for the working of raw saltpetre (caliche).

In these oficinas there were working 4751 men in the year 1885 and 22,485 men in 1895. To-day their number may be reckoned at 25,000.

The State claims two shillings and four pence per cwt. as export duty on saltpetre, and the cost of the production and the transport to the coast amounts to the same sum.

As a result of the great production prices had so fallen, especially since 1895, that a great number of the producers sold with a very slight or even no profit.

Only by the enormous increase of the consumption was this industry saved from a very grave crisis.

For the prevention of the recurrence of such a state of things the owners of saltpetre supplies residing in Europe have decided to regulate the production in such a way as to attain a fixed, never varying price.

The President of the Republic makes the following remarks about this industry in his above mentioned report of the first of June:

“The export of saltpetre was 30,043,900 Spanish tons in 1899 and was therefore 1,575,641 tons greater than in

the year 1898. The export for the current year is reckoned at 30,500,000 tons, and for the next year at 31,000,000.

The government is following the progress of this industry and will do its utmost to avert any disturbances likely to affect the exchequer's income or the value of the saltpetre supplies."

Saltpetre is regarded as the most important of all manures in all civilised lands, especially in Germany. It forms the main component part of all artificial manures used for the cultivation of plants. Generally it is mixed with other kinds of manures, such as phosphate and potash. It has been said that the degree of development that a country has reached in agriculture can be estimated by the amount of saltpetre that it uses.

NINTH CHAPTER.

EXISTING AND POSSIBLE FUTURE INDUSTRIES. — CUSTOMS-LAWS.

EXISTING AND POSSIBLE FUTURE INDUSTRIES. — Chile, which is a land rich in agriculture, mines and trade, is developing every day more and more as a commercial state. It produces nearly all raw materials as we have seen in the preceding chapters. Still this branch has not yet reached that high degree of development, which we may rightly hope it some day will; two important factors are lacking: workers and capital. We have already said how important the mining industry is and what position Chile could take with its enormous natural treasures. Besides exploiting the mines it would be possible to develop to the highest degree the chemical industry, for the raw material is to be found extensively all over the country and could easily be transformed into useful wares, the numerous rivers and coal supplies forming important sources towards the furtherance thereof.

We take the following data from the work "Boletin de la Estadistica Industrial", which is under the patronage of the Sociedad de Fomento Fabril; the said data extend up to the year 1899 and relate to these questions.

For the purposes of statistics the whole Chilian industry has been divided up into 13 groups: food, lighting, clay and glass wares, drinks and spirits, carriage factories, wood works, metal wares, building materials, weaving stuffs, paper and printing, hides and skins' works, chemical

and pharmaceutical substances, various industries. In the lists those workmen who work for themselves and in their own homes are not included, nor are the workshops included which are on the estates and serve for the needs of the property.

In order not to go too much into detail we will here treat only three or four departments, the statistics relating to which ought to be sufficient to prove to us the continuous progress of Chile's industry. In the department of Curicó for instance there are 87 workshops and factories, in which in the last year raw materials were worked amounting to a total value of 1,8 million pesos. There were 707 workmen and officials employed there; the mean average of the daily wage amounted to 1,43 pesos. The work was carried on by 349 engines, 22 motors, or a total force of 371 horses. 114 pesos worth of heating material was used daily and 397 lamps used for lighting purposes. Here it must be mentioned that this department does not belong to the rich industrial category, but represents the lowest state of industry.

We will give a few more special data respecting Valparaíso, one of the main centres of industry.

There are 417 factories and workshops, where in 1895 20 million pesos worth of raw material was used. 2606 workmen and 2203 engines and 162 steam motors, representing a force of 1766 horse power were working. 3642 pesos worth of heating material was used daily and 4822 flames for lighting purposes.

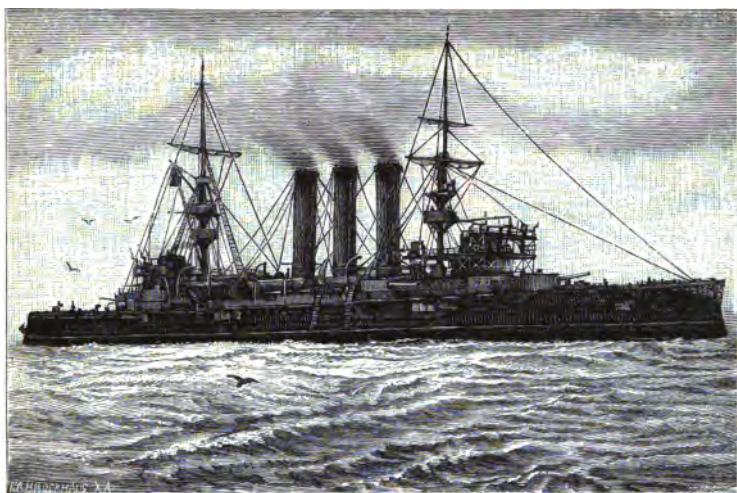
The first group of food, already mentioned by us, includes 51 establishments, which use 8,6 millions worth of raw material, and give employment to 1527 workmen. Especial mention should be made of the sugar refinery at Viña del Mar which employs 500 workers and different machines of a total force of 500 horse power. Under the heading of the fourth group (drinks) there are 4 factories for liqueur, 4 for sparkling- and mineral waters, 2 for beer, malt and ice, and 2 beer dépôts.

First among these ranks the national brewery, which was erected in 1890. The number of workmen in this

factory amounts to 359. In the fifth group we find 2 carriage factories which work with 18 engines and 83 workmen.

The sixth group includes 27 timber yards, 4 carpenter's shops, 7 saw-mills, 15 furniture-factories, 2 shipbuilding yards, and 2 cooper's yards. In all 764 workmen are employed in these workshops. The number of machines is 167.

In the seventh group are 3 smelting ovens, 1 galvanising place, 3 machine manufactories or foundries, 16 smith's and



IRON-CLAD "O'HIGGINS".

locksmith's shops, 25 tinsmith's shops, 11 jeweller's shops, with a total of 560 machines and 2714 workmen, in the group.

The eighth group comprises 25 tileries for buildings and roofs of the ordinary kind, 1 factory for flagstones, 4 marble worker's shops and 1 tar factory.

The ninth group which comprises the weaving factories, consists of 16 milliner's businesses, 2 factories for ships' sails, 4 shirt factories, 9 mattress factories, 2 artificial flower factories, 33 tailor's shops and 6 hat-factories, with a total (in the whole group) of 2368 workers of both sexes and 404 machines.

In the tenth group we have 4 bookbinder's shops, 1 cardboard box factory, 4 photographic studios, 9 printing offices, 2 lithographic institutions, 4 lithographic printing presses, and 1 engraving shop. In this group there are 619 workers and 308 machines.

The eleventh group consists of 12 tanneries, 8 shoe factories, 8 saddleries, 43 shoe shops, with a total of 2896 workers and 198 machines.

In the twelfth group there are 2 soap- and candle factories, 1 soap- and perfumery factory, and 2 factories for oils for industrial purposes, with a total of 118 employes and 40 machines.

Finally in the thirteenth group we have various industries comprising: 6 tobacco factories, 24 cigar factories, 3 laundries, 4 dyeing works, and 3 gilding works, with a total of 678 employes of both sexes and 61 machines.

There is a stock exchange in Valparaiso, founded in 1824. The building used for the exchange is one belonging to the State and there also the brokers assemble as they have done for the last 6 years.

In this chief harbour town there are 8 deposit banks, 3 mortgage banks, and one savings-bank and besides these there have been since 1895 2 agencies and branches of two German banks, namely the "Deutsche Bank" and the "Diskonto-Gesellschaft".

The most important of all these banks is the bank of Chile, which on the 31st December 1895 notified deposits at a value of 12,7 million pesos and loans worth 16,7 million pesos. In 1899 a new bank was founded, namely the "Banco Español-Italiano".

Many lines of steamers keep agencies at Valparaiso, where a commercial fleet is stationed and registered, consisting of: 39 steam barks totalling 23,764 tons and 64 sailing barks of 38,960 tons.

The department of Santiago is the true centre of industry in the country. There are 1052 classified industrial establishments. The value of the raw materials used last year amounts to 25 million pesos. The employes number 17,567, the machines 3978 and the motors 249. The latter

represent a force of 2769 horse power. The daily use of firing amounts to a value of 2380 pesos, and the number of lights burning 7305.

In the following list of all the factories, workshops and industrial establishments of the departments of Santiago no mention is made of the smallest, in which only one or two persons work and in which less than 500 pesos worth of raw material is used per annum.



BRIDGE OF THE SOUTHERN RAILWAY. MALLECO.

The industrial statistics which we have before us, gives the following data: 1 jam factory for fruits, 1 vinegar factory, 2 butter- and cheese factories, 2 ice factories, 1 chocolate factory, 4 vermicelli factories, 7 pastry bakeries, 6 biscuit factories, 3 coffee roasting places, 3 fat-preparation factories, 13 smoked-meat factories, 57 bakeries, 16 mills, 1 gas factory, 1 factory for enamelled iron, 1 for flower pots, 1 for glazed tiles, and coloured mosaics in glass, 3 beer breweries, 3 factories for beer and malt, 3 for beer and sparkling waters, 5 for sparkling waters, 5 for liqueurs and syrups, 6 beer dépôts, 6 carriage factories, 25 cart-

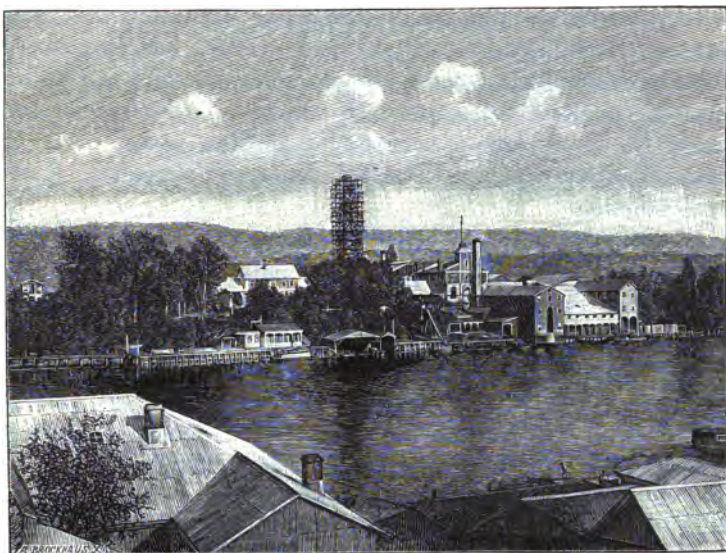
wright's shops, 6 factories for large and small carriages, 17 factories for the working of wood, 37 timber places, 25 furniture factories, 1 billiard-table factory, 9 carpenter's shops, 3 decorative work establishments, 14 cooper's works, 5 bronze works, 3 smelting works, 10 machine factories or foundries, 1 iron chest factory, 51 smithies and lock-smithies, 41 ironmonger's shops, 21 jeweller's workshops, 1 gunsmithy, 2 electrical workshops, 1 ammunition factory, 4 tile- and composition factories, 18 factories for common tiles, 31 for slates and tiles, 3 marble workshops, 2 sculpture workshops, 4 gypsum works, 20 stone masonries, 86 tailor's shops, 3 factories for ready-made clothes, 33 dress-maker's shops, 10 shirt factories, 5 hat factories, 5 ladies'-hats factories, 3 wall-paper factories, 2 lace factories, 1 rope- and cord factory, 1 factory for braids, 4 for imitation flowers, 1 for umbrellas and shunshades, 4 for mattresses, 2 for cardboard-boxes, 12 bookbinder's shops, 6 bookbinder's and printer's shops, 8 photographic studios, 19 printing works, 7 lithographic works, 1 factory for stereotyping and photography, 5 metal engraving works, 14 tanneries, 21 saddler's shops, 2 box factories, 1 glove factory, 1 hide-salting factory, 6 boot factories, 143 boot shops, 4 factories for oils used in industry, 1 sulphur-factory, 1 glue factory, 1 fireworks factory, 18 soaps- and candles factories, 3 for chemical and pharmaceutical products, 1 for gunpowder and cartridges, 1 for ink, 1 chemical factory for artificial manures, 6 hay-pressing factories, 2 for bast shoes, 1 for the silvering of metal goods, 1 for springs, 1 for paint brushes and brushes, 1 for feather brushes, 2 for basketmaking, 1 for the preparation of midwifery instruments, 2 for brooms, 6 for the working of tobacco, 11 cigar factories, 62 cigar shops, 2 musical instrument factories, 2 dyeing factories and 6 laundries.

If we carefully read through this list we shall have an idea of the steady progress of Chilian commerce.

However all these factories and workshops could be doubled without too great competition ensuing therefrom, for it must be remembered that a very high import tax

is levied upon all these goods, which could very easily be made in the country.

One sees besides that some of the most important industries of Chile, such as the chemical factories and those for the working of the very numerous and valuable hides, are still in their infancy. There is only one sulphur factory, although the best material for the manufactory is at hand in great quantities. Also there is no factory for



COLONY VALDIVIA.

nitric acid, although Chile supplies the whole world with the raw saltpetre for the preparation of this important acid.

Chile can provide all the countries of America and the whole of Europe with this invaluable acid.

It is incredible that there should be only one glove factory, although in 1898 32,696 dozen chinchilla skins were dressed to the value of 710,679 pesos, besides this there were also dressed 237,474 goatskins to the value of 94,899 pesos.

On the other hand there were imported in the same year 3406 kilos of gloves to the value of 97,820 pesos.

Among the employés of the whole district there are 3455 women, 1417 children and 1125 foreigners.

One of the industries which has developed now many years under the most favourable auspices is beer-brewing introduced by Germans. The coast trade in beer, which in 1871 consisted of 300,000 litres rose in 1881 to 6 million litres.

In 1898 beer was brewed in Chile to the value of 2 million pesos and of this 50,000 pesos worth was exported.

At the same time Chile imported from Germany and England 10,873 pesos worth of beer. Chile's beer-breweries can be considerably increased and enlarged, and as Chilean beer is excellent, it is used to provide the States on the coast of the Pacific. As a fact 2 million pesos worth of beer is already sent to Central America, Ecuador, Peru, and Bolivia.

Another great national industry is sugar refining; the raw material for this, sugar cane, hails from Peru.

As this industry has increased so much, several sugar-manufacturers have settled in Chile and use for their factories beetroot. The largest of these institutions was last year solemnly opened at the town of Parral by the President of the Republic. The French consul at Valparaiso sent his government a report in June 1900, which closes as follows:

"Chile is a source of industry of the first rank, and it would prove advantageous to our fellow countrymen to send their capital here. The Germans have done this already for a long time, so much so that for the most part one finds German machinery and German capital. Many mining enterprises, which would develop brilliantly, must remain unworked for want of capital. Agricultural conditions are affected in the same way. Everywhere people are talking of erecting factories and starting all kinds of undertakings."

There is no doubt that there are enterprises which offer certain success; they simply require the proper persons and capital, to give them life. Besides the exploitation of iron, which would be the most profitable and important

undertaking, we would mention amongst others the following industries:

The manufacture of perfumes, which is much sought after in the markets of the world. The climate of the towns of Viña del Mar and La Serena on the coast of the Pacific Ocean would for instance be eminently suitable for the cultivation of roses. Then the building and management of good hotels in the bathing centres of Chillan and Cauquenes and even in the capital of Santiago would be speculations worth indulging in, as long as they were successfully managed according to European or American pattern.

CUSTOMS-LAWS.— The import duties are levied in accordance with the law of the 23^d December 1897. According to this law wares imported from abroad have to pay a duty of either 60 %, 35 %, 15 % or 5 % of their value, or have free entry.

All those articles which are not included in the following lists, pay a duty of 25 % of their value.

60 % is paid on: brooms and brushes, except tooth-brushes and nailbrushes; sheetmetal wares, except tools; picture frames; preserves, except salmon and sardines; cravats; corsets; biscuits; vinegar; carriages of all kinds; wooden windows; balcony iron railings; iron railings for windows, gardens, or other purposes; copybooks; worked wood; chests; empty baskets; ready made articles of clothing, except those without seams, or those already subject to other duties; mattresses, masks, except those made for fencing and miners; needles; dried or preserved fruit; skins; cardboard or paper manufactures; articles of perfumery; raisins; starch; sticks; shoes, except those less than 15 centimetres long and galoshes; hams; syrups; soda; wooden doors; all kinds of spice; arms; wax candles; sugar wares and confectionery, except those of a medicinal nature.

35 % of their value is paid on: albums; battists containing linen; busts; artificial flowers; billiard-tables and all appertaining thereto; bedding; cigarette paper; iron plates for advertising purposes; fans; fireworks; pen-knives; belts; pictures; coloured or painted glass; gloves;

harmonicas; imitation jewels; hunting ammunition; iron-, steel- or wooden chests; cristal wares; cages; spermaceti or stearine candles; linen; leather wares; lithographic materials; carriage-lamps; silvered or gilded metal wares; music boxes; musical instruments; caps; opera glasses; cartridges and cases; artificial plants; powder for hunting purposes; porcelain; travelling boxes and portmanteaus; silk wares and imitation silk wares; shoe polish; looking-glasses of over 80 centimetres in length; statues; play-things; linen serviettes; fancy-feathers; sardines; clocks except pocket-watches; woollen wares; iron- or steel fencing; drawings; matches; worked zinc.

15 % of their value is paid on: boats, sloops or small boats driven by electricity or steam; iron- or steel bridges; chloride of potassium; portland cement; dynamite and other explosives; glass- or earthenware bottles; goldleaf for gilding; hemp linen; mining powder; umbrella- and parasol sticks; watches.

5 % of their value is paid on: benzine; bellows for locksmiths and tinsmiths; chromic acid potassium; prepared iron or steel for corsets or clothes; india-rubber for shoes; tinfoil for bottle stoppers; metal capsules for bottles; lead tubing; copper, bronze, iron or steel together with all belonging thereto, carriages for portable or ascending lines; carriages for chemical or analytical purposes.

TENTH CHAPTER.

CHILIAN PATAGONIA.—AGRICULTURE AND IRRIGATION.— EXPLOITATION OF THE WOODS AND COLONISATION.

CHILIAN PATAGONIA.—The following chapter can be regarded as a summary of the most important results and observations of the journeys of explorers during the last few years. These journeys were undertaken by the German savants: Professor Dr. H. Steffen, O. von Fischer, Dr. Paul Krueger, Dr. Stange, all of whom are in Chilian service.

We must start by saying that the eastern boundary of the Chilian territory described is for the most part still undecided, for it depends upon the arbitration yet to be given by H. M. the King of England.

AGRICULTURE AND IRRIGATION.—The agricultural and hydrographic conditions of the Chilian portion of Patagonia were only very superficially known until about ten years ago. The complicated fjord coast and the archipels adjoining had been surveyed by the expedition on the vessel "Beagle" and later by the Chilian naval officers; but only in a few parts, such as in the river valleys of the Palena and Aisen, had the latter made serious attempts to penetrate into the interior. The only place in which they had succeeded in pressing forward from the Pacific coast over the mountains as far as the Argentinian pampas, was the mountain pass of Perez Rosales on about the 41° southern latitude, a narrow path known as early as the 17th century to the Jesuit missionaries, and leading up to the Argentinian lake of Nahuelhuapi.

Not till the practical work was begun in 1891 for the determination of the Chilean-Argentinian boundary line on the basis of the treaty of 1881, were expeditions sent out to study more exactly the Andes region of Patagonia, and the results thereof together with the results of the surveys of the Chilean and Argentinian boundary commission render it possible to form a picture of the oro- and hydrography of that neighbourhood on a large scale, although there remains yet much to be done in the way of detailed exploration.

The part of Patagonia appertaining to the Republic of Chile — from the coast of the Pacific Ocean up to the Andes — is filled in its whole extent with masses of hills, which have been considered since the time of the conquest as a part of the Cordillera de los Andes which run along the whole west coast of South America.

South of Mount Tronador, 41° 10' southern lat., 3458 metres high, which beats all other neighbouring hills both in regard to height and glacial development, the continuation of a uniform main feature of the Cordilleres in the southern direction is interrupted, and the range appears in a large number of short chains and rows of mountains between which lie deep and broad valleys. Most of these valleys run into gulfs of the sea, which branch off from the long trough of the Pacific gulfs and canals (Golfo de Reloncavi, Golfo de Corcovado, Moraleda canal and southern continuations, Golfo de Peñas, Messier canal, Smyth canal, etc.) and penetrate the interior between steep walls of mountain. Many of these openings into the sea which resemble the Norwegian fjords, and are called in Chile "esteros" or "estuarios" and "canales" afford good but not very spacious harbours; as for instance the Boca de Reloncavi, at the northern end of which is the harbour of Ralun colonised by Chilotes, and which as early as the times of the Spanish missionaries was important as being the starting point of the overland route to the district of Nahuelhuapi.

The Estero Pichi Palena too, which is situated north of the mouth of the river Palena (43° 45' southern lat.)

at the western exit of which a little colony has existed since 1889, has a safe harbour, which can become important for the colonisation of the inner Palena valley.

The most important of all the west Patagonian fjords is the Baker canal (also called Estero Colén), which is situated in the $47^{\circ} 50'$ southern lat., behind high rocky islands, and penetrates over 80 kilometres into the mainland and branches out into a large number of side arms, dividing up the western half of the Cordilleres' mass into a maze of separate groups of hills and rocks. Of the hitherto known harbours the one on the northern bank of the canal, the Puerto Azopardo, about 20 kilometres away from the mouth of the canal, is the most important.

Finally one must mention the Ultima Esperanza Fjord in the extreme south, which stretches in the $51\frac{1}{2}^{\circ}$ southern lat., through the whole breadth of the Cordilleres and possesses a beautiful harbour (Puerto Consuelo) on its east side, which is already now being used for the export of wool from the neighbouring sheepfarms of the Magellan territory.

The continuation inland of the large valleys above mentioned which are crossed by the Patagonian Cordilleres, is formed by the large streams from the valleys, the little branches of which reach often as far as the low eastern spurs of the Andes. Only a few of these rivers, such as the Rio Yelcho (43° southern lat.), the Palena and the Rio Baker ($47^{\circ} 50'$), the greatest of all, offer a clear course of more than 50 kilometres in length; in the case of most of them, even when the tide in the river is no longer perceptible, a wide series of rapids puts an end to all shipping. Further up the rivers wind through a series of low but often steep cañon-like ravines (angosturas), which present to the eye at times hollow boiler-like excavations in the valley and often show beautifully kept river terraces on the slopes.

The crossing of the Angosturas was always connected with great difficulties and dangers for the first expeditions of discovery, which had to force their way up stream from the west coast; a closer study however of the lay of the

land with a view to the laying of roads will probably result in the avoidance of the main defiles of the valley and the choice of suitable side valleys or of neighbouring heights with flat slopes.

The only really important difficulty is the primeval forest, which stretches from the level of the sea to the snow line, for through it the way must be cut step by step with axe and knife.

Between 41° and 44° southern lat. there appear, in the eastern half of the Andes of Patagonia, valleys stretching north and south of considerable size, from which the Rio Puelo's tributary, the Valle Nuevo, and further south the valleys of Cholila, Perzey and Sixteenth of October, and finally the river Yelcho's Valle Frio and the valley of the river Carrileufu are claimed by Chile, because they are situated west of the watershed. As they are bounded westwards by mighty massifs, reaching often to 2000 to 2500 metres above the level of the sea, and are therefore protected against the rainy winds coming from the NW., W. and SW., a great difference can be noticed here already in the climate and in the vegetation as compared with the dripping primeval forest valleys of the zone of the coast.

The charming scenery of Patagonia in the Andes, especially in the eastern portion, is increased still more by the numberless peeps of the sea that appear at intervals.

Most of the large west Patagonian rivers, such as the Rio Puelo and the Rio Manso, the Yelcho, Baker, Pascua (48° southern lat.), and the Serrano (51½° southern lat.), are the conductors of water from many-branched lakes, the greatest of which, the Lago Buenos Ayres, from which rises the Rio Baker, is more than double as large as Lake Constance.

Also two large rivers flowing down to the Atlantic Ocean rise in lakes which penetrate deep into the Cordilleres; their names are the Rio Santa Cruz (50°) in the Lagos Argentino and Viedma, and the Rio Senguier (45°) in the Lagos Fontana and La Plata. In opposition hereto there are large territories of Chilean Patagonia, which must count

among the most comfortless places on the earth owing to orographic and climatic reasons. Among their number are the ice-bound and glacier-covered parts of the High Cordilleres, which extend north of the Baker fjord as far as the 46° parallel and from these there break forth huge icy streams reaching down some of them as far as the level of the sea, as for instance in the case of the Lago San Rafael ($46^{\circ} 30'$ southern lat.) all along the narrow band of land connecting the peninsula of Taitao with the continent. Also in many fjords south of the Baker canal (in the Eyre and Peel Esteros), and in many points of the western portion of the Strait of Magellan, glaciers reach down right into the sea and form the icebergs which, appearing in the middle of the fjord bays all surrounded by primeval forest, provide a strange picture rich in contrasts.

Although there is a whole row of high Cordillera peaks, whose outward form and geographical position point to their having originated from volcanic cone of debris, the volcanic activity in historic times is only provable in the case of very few of them. To the latter belong the volcano of Osorno ($41^{\circ} 7'$), the Corcovado ($43^{\circ} 10'$) and the Chalten or Fitz-Roy (49°), further the volcanoes of Calbuco ($41^{\circ} 20'$) and Huequen ($42^{\circ} 20'$), which have been in a state of eruption since 1893.

Further details are known certainly only of the eruption of the Calbuco, the surroundings of which are inhabited.

The greatest elevations occur regularly along the various longitudinal zones of the Patagonian Andes. They lie near the sea shore, whilst in other parts the inner peaks, which are many of them unnamed and not definitely fixed, dominate above. The development and height of the range reaches its maximum between the 46° and 48° parallel. Here are situated, amongst others, the ice-encircled Monte San Valentin, with its 3870 metres the highest mountain in Patagonia, and, far removed towards the east, Mount Cochrane (3700 metres), flanked by a series of giant mountains of about the same standing.

EXPLOITATION OF THE WOODS AND COLONISATION.—The primeval forest, which covers the hills and valleys of Chilian Patagonia, contains a quantity of valuable wood, the exploitation of which by the Chilotie population has been carried on already for centuries, but unfortunately in the most unmethodical manner. In no single place does one find one special species; everywhere there is a brilliant mixture of the most various kinds of trees.

In the times previous to the appearance of colonists there seem certainly to have existed in Llanquihue and Chiloé large stretches of wood consisting entirely of Alerze (*Fitzroya patagonica*); even now there are visible near Puerto Montt the remains of such Alerzale in the shape of gigantic stumps.

The Alerze pines, whose trunks sometimes reach the height of 50 metres and a diameter of more than one metre, and whose wood splits so easily that it can be at once worked up at the spot where the tree has been felled into planks and boards, are to be found even now in fairly large quantities in the High Cordilleres, and can be recognised at a great distance by their grey-green colour and by the special form of their crests, which stand out above the surrounding woods.

In the mountains on both sides of the Boca de Reloncavi the Boca de Comau and Refihué, in the hinterland of these fjords and in a few of the valleys made by the tributaries of the upper course of the Rio Yelcho, there are still expanses of Alerzale to be seen, the exploitation of which has not yet been systematically begun. South of $43\frac{1}{2}^{\circ}$ no more Alerze are to be found.

Besides the Alerze comes next in importance among the building wood the so-called species of *Libocedrus chilensis* ("cedro" or "Ciprés de la montaña"), which is a most splendid building wood. Its chief home is in the inner and eastern valleys of the Patagonian Cordilleres where indeed great quantities have been destroyed by forest fires.

Of other coniferous trees in the Patagonian primeval forest might be mentioned: *Libocedrus tetragona* or Ciprés,

which develops especially well in the Guaitecas- and Chonos islands, and the wood of which is used for ship building.

Here too unfortunately the foolish devastation of the forests by fire has ruined the most valuable expanses. The chilotes have for this reason for a long time already searched through the coast parts of the high Cordilleres for cipress woods and there continue their work of devastation in order to sow in the ashes. The cipresses that are found in the inner valleys of the mountains, are, it is true, for the most part small, weakly trees growing in swampy ground. In contrast to the other coniferous trees this tree extends as far as the extreme south of Patagonia and is even found in the Terra del Fuego in thinly wooded spots.

The two kinds of the Mañiu fir tree (*Saxegothea* and *Podreaspus*) appear in many valleys, as for instance on the Rio Cisnes and Rio Mañinales, a main branch of the Rio Aisen; on the whole though the main riches of the south Chilean woods consists not so much in coniferous as in leaved wood, chief among which are the different kinds of beeches (*Nothofagus Dombeyi* or "coigue", *Nothofagus Pumilio* or "rauli" and *Nothofagus antarctica*). Coigue and Rauli grow good heart wood suitable for building ships and houses, tubs etc.

Then there is too the Muermo- or Ulmo tree in the coast woods of northern Patagonia; the Ulmo is also called the *Eucryphia cordifolia*; this tree provides, as well as good tanning bark, also wood suitable for burning and building; we must also mention the very solitary tree, the Maiten (*Maitenus boaria*), which is to be found in gigantic proportions especially in the more open regions of the eastern valleys.

Many of the plains and expanses of country now covered with primeval forest in the valleys of the Puelo, Yelcho, Palena, Cisnes, Aisen, Baker, Pascua, and the Seirano could be used for the purposes of agriculture and cattle-breeding.

In the parts of the first mentioned near the coast, that is to say about as far as the 47° parallel, there is great

abundance of the bamboo jungle called the Quila (Chusquea Quila) and this affords the richest food for cattle.

When the Quila reeds have bloomed, they die down, so that in many parts the ground of the valleys is entirely covered for miles round with the dried stalks and blades of this plant. The clearance of the forest by fire would then be very easily effected, and the first step towards colonisation taken.

South of the afore-mentioned latitude the Quila jungle stops and in its place appears the Tepual — still more a hindrance to advance — which is the underwood of a Myrtaceae (*Tepualia stipularis*), which certainly affords most excellent firing material. The Llanadas, as the Chilotes call the wooded plateaux of the inner valleys, have mostly splendid vegetable soil and also lie beyond the reach of the great floods, which can prove so dangerous to the low land of the lower sections of the valley. Colonists who came as far as this, would find the country in many places suitable for agricultural purposes, even if cattle-breeding and forestry should always remain the main occupation of the settlers.

By far the most valuable tracts of land lie in the above-described longitudinal valleys of the eastern half of the mountain range from Nahuelhuapi Lake southwards as far as about the 43° parallel. Rich supplies of water, luxuriant meadow land, alternating with open bush, protected situations under the brows of scattered hills, and an equable climate which keeps the mean between the excessive rainfall on the west coast and the aridity and extremes of the temperature of the Patagonian highlands, are conditions favourable to colonists, and indeed the success of the few colonists, who have lived there up to now, confirms this opinion.

The chief group of the colonists who have immigrated here from the east (from Argentina) over the low watershed passes, have remained in the valley of the Sixteenth of October. Starting from this centre, cattle-breeding peasants have also settled in the surrounding valleys, amongst others on the upper Palena. Further north (as far as, nearly, Lake Nahuelhuapi), an English company

possesses different stancias and farms, where they breed to a large extent cattle and sheep.

Chilian Patagonia, the extent of which has not yet been determined, can be compared as regards form and climate of its coast, with Norway, while the interior reminds one of Switzerland.

The reports of travellers and explorers and the many beautiful published photographic views, give us a charming picture of the resemblance between the canals or Esteros of the Pacific Ocean with the fjords of the North Sea, and also of the mountains and lakes of the interior, which remind one everywhere of the well known Swiss landscapes, where a hard working population has created for itself a multifarious and busy commerce.

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